Author Index to Volume 53

(L) indicates Letters to the Editor, (E) indicates Errata, and (T) indicates Title only. It will be noted that there are no references to "see someone else" in the Author Index. Although it has meant a little duplication, there have been included under each author all articles in which he was author or co-author. All articles in which the author has participated are arranged under his name in the chronological order of publication. Although not strictly an authored article, we have included Book Reviews both under the book author as well as the reviewer.

The abstracts of papers presented at meetings are keyed by the same notation that identified them by day and session of presentation. If the paper covered by the abstract has been submitted and published in the same year as the abstract, this has been indicated by a solidus (/) between the abstract notation and the Journal page of the full article, i.e., 264(FA*12*)/622 indicates that the paper described in abstract No. FA*12* on page 264 has been published in full on page 622.

Aagard, R. L.
Losses in a pulsed ruby laser, R. L. Aagard—911

Abeles, F.
Study of the optical and electrical properties of thin films of palladium, F. Abeles, P. Lostis, and I. Wilmanns—1332(WB*14*)

Abels, Larry L.
Study of the total absorptance near 4.5 μ by two samples of N_2O as their total pressures and N_2O concentrations were independently varied, Larry L. Abels and John H. Shaw—856

Adams, Ansel
Polaroid Land Photography Manual by Ansel Adams. Book review by C. S. McCamy—1117

Adams, H. D.
Photovoltaic indium arsenide infrared detectors, H. D. Adams—1355(FD*13*)

Akerib, R.
Empirical relations for the energy levels of atoms and ions in an isoelectronic sequence, R. Akerib—918

Allen, Eugene
Simple graphical conversion of colorimetric ratios to chromaticity differences; application to determination of chromaticity difference for near-white samples, Eugene Allen—1107

Allen, Harry C., Jr.
Orbitals in Atoms and Molecules by Chr. Klixbüll Jørgensen. Book review by Harry C. Allen, Jr.—1224

Alpern, Mathew
Entopic stray light from halation in the fundus, Mathew Alpern—521(WA*15*)

Alpher, R. A.
Comments on an experiment concerning Einstein's light velocity postulate, D. R. White and R. A. Alpher—760(L)

Amigo, George
Variation of stereoscopic acuity with observation distance, George Amigo—630

Anderson, Richard
Decay of intensity of certain Hg lines in an Hg–Ar discharge, Richard Anderson and Edward Stepp—1139

Andrew, K. L.
Proposed standard wavelengths in the vacuum ultraviolet. Spectra of Ge, Ne, C, Hg, and N, P. G. Wilkinson and K. L. Andrew—710

Armitage, J. D.
Achievement of absolute contrast enhancement by the photographic-masking technique, J. D. Armitage and R. B. Herrick—1356(FE*15*)

Ashley, E. J.
Effect of surface damage on the reflectance of germanium in the 3400- to 10 000-Å wavelength region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—519(TD*13*)
Infrared reflectance of aluminum evaporated in ultra-high vacuum, H. E. Bennett, M. Silver, and E. J. Ashley—1089
Reflectance of evaporated germanium films, T. M. Donovan and E. J. Ashley—1331(WB*12*)
Effect of surface damage on the reflectance of germanium in the 2650–10 000 Å region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—1403

Athas, William C.
Coherence design considerations in optical computers, William C. Athas—523(WB*19*)

Ator, Joe T.
Image-velocity sensing with parallel-slit reticles, Joe T. Ator—513(MD*16*)/1416

Atwood, John G.
Prospects for spectroscopic instrumentation using coherent light, John G. Atwood—1343(TD*1*)

Aubel, J. L.
Magnetic-rotation spectra of NO_2 in the near infrared, J. L. Aubel and C. D. Hause—515(TB*11*)

Aung, Tin
Optical spectrum of $^{198}Hg^{88}$, Sumner P. Davis, Herbert Kleiman, and Tin Aung—506(MA*11*)

Axelrod, Norman N.
Microwave line source for vacuum ultraviolet, Norman N. Axelrod—297(L)

Babcock, G. C.
Determination of the constancy of the speed of light, G. C. Babcock and T. G. Bergman—1357(FF*13*)

Babrov, Harold J.
Experimental and theoretical infrared spectral absorptance of HCl at various temperatures, Harold J. Babrov—945

Baird, K. M.
Vacuum wavelengths of Kr^{86}, Hg^{198}, and Cd^{114}, K. M. Baird, D. S. Smith, and K. H. Hart—717

Baird, W. S.
Some properties of concave reflecting-zone plates, W. S. Baird and A. F. Quesada—513(MD*20*)

Baker, Frank H.
Pupillary response to double-pulse stimulation; a study of nonlinearity in the human pupil system, Frank H. Baker—1430

Baker, Howard D.
Initial stages of dark and light adaptation, Howard D. Baker—98

Baker, S. C.
Spectroscopic estimation of dc arc electrode vapor-jet velocities, S. C. Baker—1345(TE*11*)

Balinkin, Isay
Mechanical model demonstrating pulse laser, Isay Balinkin—1340(TA*20*)

Ballard, Stanley S.
Ultraviolet absorption coefficients of four alkali halides, David P. Glenn and Stanley S. Ballard—517(TB*21*)

Author Index to Volume 53

(L) indicates Letters to the Editor, (E) indicates Errata, and (T) indicates Title only. It will be noted that there are no references to "see someone else" in the Author Index. Although it has meant a little duplication, there have been included under each author all articles in which he was author or co-author. All articles in which the author has participated are arranged under his name in the chronological order of publication. Although not strictly an authored article, we have included Book Reviews both under the book author as well as the reviewer.

The abstracts of papers presented at meetings are keyed by the same notation that identified them by day and session of presentation. If the paper covered by the abstract has been submitted and published in the same year as the abstract, this has been indicated by a solidus (/) between the abstract notation and the Journal page of the full article, i.e., 264(FA*12*)/622 indicates that the paper described in abstract No. FA*12* on page 264 has been published in full on page 622.

Aagard, R. L.
Losses in a pulsed ruby laser, R. L. Aagard—911

Abeles, F.
Study of the optical and electrical properties of thin films of palladium, F. Abeles, P. Lostis, and I. Wilmanns—1332(WB*14*)

Abels, Larry L.
Study of the total absorptance near 4.5 μ by two samples of N_2O as their total pressures and N_2O concentrations were independently varied, Larry L. Abels and John H. Shaw—856

Adams, Ansel
Polaroid Land Photography Manual by Ansel Adams. Book review by C. S. McCamy—1117

Adams, H. D.
Photovoltaic indium arsenide infrared detectors, H. D. Adams—1355(FD*13*)

Akerib, R.
Empirical relations for the energy levels of atoms and ions in an isoelectronic sequence, R. Akerib—918

Allen, Eugene
Simple graphical conversion of colorimetric ratios to chromaticity differences; application to determination of chromaticity difference for near-white samples, Eugene Allen—1107

Allen, Harry C., Jr.
Orbitals in Atoms and Molecules by Chr. Klixbüll Jørgensen. Book review by Harry C. Allen, Jr.—1224

Alpern, Mathew
Entopic stray light from halation in the fundus, Mathew Alpern—521(WA*15*)

Alpher, R. A.
Comments on an experiment concerning Einstein's light velocity postulate, D. R. White and R. A. Alpher—760(L)

Amigo, George
Variation of stereoscopic acuity with observation distance, George Amigo—630

Anderson, Richard
Decay of intensity of certain Hg lines in an Hg–Ar discharge, Richard Anderson and Edward Stepp—1139

Andrew, K. L.
Proposed standard wavelengths in the vacuum ultraviolet. Spectra of Ge, Ne, C, Hg, and N, P. G. Wilkinson and K. L. Andrew—710

Armitage, J. D.
Achievement of absolute contrast enhancement by the photographic-masking technique, J. D. Armitage and R. B. Herrick—1356(FE*15*)

Ashley, E. J.
Effect of surface damage on the reflectance of germanium in the 3400- to 10 000-Å wavelength region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—519(TD*13*)
Infrared reflectance of aluminum evaporated in ultra-high vacuum, H. E. Bennett, M. Silver, and E. J. Ashley—1089
Reflectance of evaporated germanium films, T. M. Donovan and E. J. Ashley—1331(WB*12*)
Effect of surface damage on the reflectance of germanium in the 2650–10 000 Å region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—1403

Athas, William C.
Coherence design considerations in optical computers, William C. Athas—523(WB*19*)

Ator, Joe T.
Image-velocity sensing with parallel-slit reticles, Joe T. Ator—513(MD*16*)/1416

Atwood, John G.
Prospects for spectroscopic instrumentation using coherent light, John G. Atwood—1343(TD*1*)

Aubel, J. L.
Magnetic-rotation spectra of NO_2 in the near infrared, J. L. Aubel and C. D. Hause—515(TB*11*)

Aung, Tin
Optical spectrum of $^{198}Hg^{88}$, Sumner P. Davis, Herbert Kleiman, and Tin Aung—506(MA*11*)

Axelrod, Norman N.
Microwave line source for vacuum ultraviolet, Norman N. Axelrod—297(L)

Babcock, G. C.
Determination of the constancy of the speed of light, G. C. Babcock and T. G. Bergman—1357(FF*13*)

Babrov, Harold J.
Experimental and theoretical infrared spectral absorptance of HCl at various temperatures, Harold J. Babrov—945

Baird, K. M.
Vacuum wavelengths of Kr^{86}, Hg^{198}, and Cd^{114}, K. M. Baird, D. S. Smith, and K. H. Hart—717

Baird, W. S.
Some properties of concave reflecting-zone plates, W. S. Baird and A. F. Quesada—513(MD*20*)

Baker, Frank H.
Pupillary response to double-pulse stimulation; a study of nonlinearity in the human pupil system, Frank H. Baker—1430

Baker, Howard D.
Initial stages of dark and light adaptation, Howard D. Baker—98

Baker, S. C.
Spectroscopic estimation of dc arc electrode vapor-jet velocities, S. C. Baker—1345(TE*11*)

Balinkin, Isay
Mechanical model demonstrating pulse laser, Isay Balinkin—1340(TA*20*)

Ballard, Stanley S.
Ultraviolet absorption coefficients of four alkali halides, David P. Glenn and Stanley S. Ballard—517(TB*21*)

Role of optical and infrared systems on the Atlantic Missile Range, Dennis C. Marquis and Stanley S. Ballard —518(TC*14*)

Launch ciné-spectrograph program, John L. Streete and Stanley S. Ballard—1345(TD*19*)

Band, H. E.

Spectral reflectance and albedo measurements of the earth from high altitudes, L. C. Block and H. E. Band—1333(WA*11*)

Barakat, N.

On the factors contributing to the formation of multiple-beam Fizeau fringes, N. Barakat and S. Mokhtar—300(L)

Experimental determination of phase change at reflection from glass–metallic layer interface using a Koster interference comparator, N. Barakat and S. Mokhtar—1153

Barakat, Richard

Stochastic generalization of the Green-Wolf complex scalar potential of electromagnetic theory, Richard Barakat—252

Application of apodization to increase two-point resolution by the Sparrow criterion. II. Incoherent illumination, Richard Barakat and Elgie Levin—274

Theory of the coherency matrix for light of arbitrary spectral bandwidth, Richard Barakat—317

Transfer functions and total illuminance of high numerical aperture systems obeying the sine condition, Richard Barakat and David Lev—324

Diffraction of plane waves by a slit between two different media, Richard Barakat—1231

Reciprocity relations between the transfer function and total illuminance. I, Richard Barakat and Agnes Houston—1244

Modulation of square-wave objects in incoherent light. I, Richard Barakat and Agnes Houston—1371

Measurement of the total illuminance in a diffraction image. I. Point sources, Richard Barakat and Alfred Newman—1365

Barlow, Bertram L.

Optical multiplication interferometer system for continuous position control or measurement over large distances, C. Frank Mooney and Bertram L. Barlow—1358(FF*16*)

Barr, E. Scott

A Textbook on Light at an Introductory Level by L. Mackinnon. Book review by E. Scott Barr—767

Barrekette, E. S.

Blazed diffraction gratings, E. S. Barrekette and R. L. Christensen—525(WD*13*)

Bartky, Charlotte E.

Diffuse reflection and transmission by a plane parallel, homogeneous cloud, Charlotte E. Bartky—1334(WA*14*)

Bates, R. L.

Black radiation detector, W. L. Eisenman, R. L. Bates, and J. D. Merriam—729

Black-radiation detector: 1–40 μ, R. L. Bates and W. L. Eisenman—1355(FD*15*)

Battersby, William S.

Evoked potential analysis of visual excitability, Joseph F. Sturr and William S. Battersby—1337(WD*20*)

Bauman, Robert P.

Solvent effects on carbonyl bands in infrared spectra, Robert P. Bauman and Elinor Thomson—202(L)

Absorption Spectroscopy by Robert P. Bauman. Book review by M. G. Mellon—501

Behring, William E.

Theory of the concave grating for arbitrary locations of the light source, William E. Behring—525(WD*14*)

Bekefi, G.

Far-infrared interferometer for the measurement of high electron densities, Sanborn C. Brown, G. Bekefi, and R. E. Whitney—448

Ben-Aryeh, Y.

Statistical model applied to the region of the ν_3 fundamental of CO_2 at 1200°K, U. P. Oppenheim and Y. Ben-Aryeh—344

Bennett, F. D.

Optics of Flames by F. J. Weinberg. Book review by F. D. Bennett—1224

Bennett, H. E.

Effect of surface damage on the reflectance of germanium in the 3400- to 10 000-Å wavelength region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—519(TD*13*)

Infrared reflectance of aluminum evaporated in ultra-high vacuum, H. E. Bennett, M. Silver, and E. J. Ashley—1089

Specular reflectance of aluminized ground glass and the height distribution of surface irregularities, H. E. Bennett—1389

Effect of surface damage on the reflectance of germanium in the 2650–10 000 Å region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—1403

Bennett, William R., Jr.

Laser wavelength and frequency standard, Gordon Gould and William R. Bennett, Jr.—515(TA*19*)

Bentley, Donald L.

Mathematical representation for Wald's compartment theory, Donald L. Bentley—287

Berchtold, Jean

Infrared fluorescence of green leaves, Jean Berchtold—1006(L)

Bergman, T. G.

Determination of the constancy of the speed of light, G. C. Babcock and T. G. Bergman—1357(FF*13*)

Bergstein, Leonard

Reflection and transmission of bounded waves by layered media, Leonard Bergstein and Carl Shulman—519(TD*11*)

Berkowitz, D. A.

Collection efficiency of receivers placed close to sources, D. A. Berkowitz and Enn Tammaru—1292

Betz, H. T.

Magnetostrictively scanned Fabry–Perot interferometer, P. N. Slater and H. T. Betz—1358(FF*19*)

Scanning Fabry–Perot interferometer for day-airglow measurements, H. T. Betz, P. N. Slater, and A. Weigandt—1358(FF*20*)

Bhatia, Balraj

Constancy of the visibility of a moving object viewed from different distances with the eyes fixed, Balraj Bhatia and C. A. Verghese—283

Bhaumik, M. L.

Quantum efficiency of rare-earth chelates, M. L. Bhaumik —1346(TE*16*)

Bieniewski, T. M.

Refractive indexes of single hexagonal ZnS and CdS crystals, T. M. Bieniewski and S. J. Czyzak—496(L)

Bierman, A.

Remark in a paper by Kantor, A. Bierman, C. H. von Kenschitski, and D. Pandres—1008(L)

Biernson, George

Uni-receptor theory of color perception, George Biernson —520(WA*11*)

Is color vision three-dimensional? George Biernson—1356(FE*11*)

Bignell, K.
On the atmospheric infrared continuum, K. Bignell, F. Saiedy, and P. A. Sheppard—466

Billmeyer, Fred W., Jr.
Tables of Adams chromatic-value color coordinates, Fred W. Billmeyer, Jr.—510(MC*11*)/1317(L)

Blackwell, H. Richard
Neural theories of simple visual discriminations, H. Richard Blackwell—129

Blake, Robert E.
Erratum: Technique for approximating the sine-wave response of aerial film, Robert E. Blake [**52**, 1409 (1962)]—500

Blanco, V. M.
Basic Physics of the Solar System by V. M. Blanco and S. W. McCuskey. Book review by Wasley S. Krogdahl —*766*

Blau, Henry H., Jr.
Spectral-radiance properties of high-altitude clouds, Henry H. Blau, Jr.—1331(WA*2*)

Block, L. C.
Spectral reflectance and albedo measurements of the earth from high altitudes, L. C. Block and H. E. Band—1333(WA*11*)

Böer, K. W.
Physica Status Solidi, K. W. Böer, Editor-in-Chief. Book review by Pierre Mertz—645

Boesen, G. F.
Temperature dependence of photodetector response, G. F. Boesen, H. S. C. Chow, and P. F. Fenlon—1355(FD*16*)

Boivin, Albéric
Structure of the electromagnetic field in the neighborhood of the focus of an aplanatic optical system, Albéric Boivin and E. Wolf—1342(TC*11*)
Evaluation of certain integrals occurring in electromagnetic diffraction near focus, Albéric Boivin—1351(FB*20*)

Bone, L. P.
Far-field diffraction and polarization properties of a three-dimensional hollow, homogeneous, isotropic cone, A. I. Mahan and L. P. Bone—533

Boogaard, J.
Contribution of the cornea to entoptic scatter, J. J. Vos and J. Boogaard—869

Bouché, Edmund L.
Experimental determination of the degree of coherence $\gamma_{12}(o)$, Edmund L. Bouché and Paul F. Kellen—1350 (FB*14*)

Bouman, M. A.
Fluctuation theory of luminance and chromaticity discrimination, M. A. Bouman, J. J. Vos, and P. L. Walraven—121

Bowlden, H. J.
Evaluation of the one-angle reflection technique for the determination of optical constants, H. J. Bowlden and J. K. Wilmshurst—1073

Boynton, Robert M.
Contributions of threshold measurements to color-discrimination theory, Robert M. Boynton—165
Quantum- and energy-based visual sensitivity on a single plot, Robert M. Boynton—641(L)

Bradford, Alan P.
Increasing the far-ultraviolet reflectance of silicon-oxide-protected aluminum mirrors by ultraviolet irradiation, Alan P. Bradford and Georg Hass—1096

Braunstein, Myron L.
Effect of body position on brightness discrimination, Myrón L. Braunstein and John B. Siegfried—1114(L)

Brecher, Charles
Fluorescence of solutions of β-diketone europium chelates, Charles Brecher, Alexander Lempicki, and Harold Samelson—1346(TE*15*)

Breene, R. G., Jr.
Free-free continuum of oxygen. II. Effect of polarization and exchange, R. G. Breene, Jr., and Maria C. Nardone —924

Brewer, Leo
Absolute oscillator strengths of C_3 Swan bands, Leo Brewer and Lucy Hagan—1345(TE*12*)

Bridenbaugh, P. M.
Fluorescent lifetime of terbium in the presence of other rare-earth ions, G. E. Peterson and P. M. Bridenbaugh —301(L)
Effects of rare-earth-ion substitution upon the fluorescent lifetime of terbium in the compound terbium hexa-antipyrene tri-iodide, G. E. Peterson and P. M. Bridenbaugh—494(L)
Some studies of relaxation processes in Tb^{3+} using pulsed excitation, G. E. Peterson and P. M. Bridenbaugh—1129

Bridgeman, T.
Inversion of the Munsell value equation, T. Bridgeman—499(L)

Brown, Paul K.
Problem of visual excitation, George Wald, Paul K. Brown, and Ian R. Gibbons—20

Brown, Sanborn C.
Far-infrared interferometer for the measurement of high electron densities, Sanborn C. Brown, G. Bekefi, and R. E. Whitney—448
Count Rumford, Physicist Extraordinary by Sanborn C. Brown. Book review by W. E. K. Middleton—768

Brunelle, H. E., Jr.
Coaxial, dual-field optics for a space sextant, H. E. Brunelle, Jr., and R. R. Willey, Jr.—1344(TD*18*)

Brushenko, A.
Hypodermic microscope using fiber optics—an instrument to observe living tissue, Charles Long, II, A. Brushenko, and D. A. Pontarelli—1333(WB*20*)
Spectral transmittance of fiber bundles, O. H. Olson, D. A. Pontarelli, and A. Brushenko—1333(WB*21*)

Bryngdahl, Olof
Wavefront-shearing interferometer for direct recording of the refractive index gradient in Cartesian coordinates, Olof Bryngdahl—571
On the determination of the modulation transfer function of the visual system from contrast-phenomena effect measurements, Olof Bryngdahl—1336(WD*16*)

Burke, J. J.
Fiber optics. X. Evanescent boundary wave propagation, N. S. Kapany, J. J. Burke, and C. C. Shaw—929
Diffraction at dielectric and conducting apertures of a few-wavelength size, J. J. Burke, N. S. Kapany, and K. Frame—1332(WB*16*)

Cagnet, Michel
Atlas of Optical Phenomena by Michel Cagnet, Maurice Françon, and Jean Claude Thrierr. Book review by F. W. Rosberry—881

Callahan, Wm. R.
Spectrum of doubly ionized gadolinium, Wm. R. Callahan —695

Camus, John
Interferential spectrometer for far-infrared investigations, John Camus—1355(FD*17*)

Candidus, E. S.
Optical surface comparator, E. S. Candidus and G. F. Vanderschmidt—509(MB*19*)

Canfield, L. Randall
On the vacuum-ultraviolet reflectance of evaporated aluminum before and during oxidation, R. P. Madden, L. R. Canfield, and G. Hass—620
Reflecting films of platinum for the vacuum ultraviolet, Gordon F. Jacobus, Robert P. Madden, and L. Randall Canfield—1084
Carlough, Warren
Radial shearing interferometer, Eric Donath and Warren Carlough—395(L)
Carpenter, Robert O'B.
Line strengths and spectral emissivities of nitric oxide vs temperature and amount of gas, Robert O'B. Carpenter and Michael A. Franzosa—516(TB*12*)
Carpenter, Vance J.
Granularity of rear projection screens, Vance J. Carpenter —522(WA*20*)
Chang, N. C.
Simple method of quantum-efficiency measurement, N. C. Chang—1315(L)
Charman, W. N.
Some experimental measurements of diffraction images in low-resolution microscopy, W. N. Charman—410
Diffraction images of circular objects in high-resolution microscopy, W. N. Charman—415
Chaves, Aldo Alvim de Rezende
Optical magnification beyond Rayleigh's limits, Aldo Alvim de Rezende Chaves—639(L)
Chow, H. S. C.
Temperature dependence of photodetector response, G. F. Boesen, H. S. C. Chow, and P. F. Fenlon—1355(FD*16*)
Christensen, R. L.
Blazed diffraction gratings, E. S. Barrekette and R. L. Christensen—525(WD*13*)
Church, Charles H.
Coaxial laser pumps, Charles H. Church, Derek Ryan, and James P. Lesnick—514(TA*11*)
Churchill, R. J.
Image-smearing errors in framing camera photographs, F. L. Curzon and R. J. Churchill—1101
Clark, G. L.
Time-resolved spectroscopy of ruby laser emissions, S. L. Ridgway, G. L. Clark, and C. M. York—700
Cleek, G. W.
Absorption spectra of the lanthanide series of rare-earth glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—517(TB*20*)
Absorption spectra of the first transition series in phosphate glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, V. R. Weidner, and Carol Ann Smith—1353(FC*17*)
Further progress towards development of a single filter for the wavelength calibration of spectrophotometers between 0.25 and 2.6 μ, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—1353(FC*18*)
Clendenin, W. W.
Fresnel diffraction of the plane phase grating, W. W. Clendenin—*267*
Coblentz, William W.
Investigations of Infra-Red Spectra by William W. Coblentz. Book review by John Strong—881
Collins, S. A., Jr.
Interferometer laser mode selector, S. A. Collins and G. R. White—514(TA*14*)
Optical-resonator-mode analysis, S. A. Collins, Jr.—1339 (TA*13*)
Condit, H. R.
Spectral-energy distribution of daylight, H. R. Condit and F. Grum—1340(TB*12*)
Considine, Philip S.
Experimental study of coherent imaging, Philip S. Considine—1351(FB*15*)
Conway, John G.
Self-luminescence spectrum of $Bk^{3+}(5f^8)$, Ralph G. Gutmacher, E. Kenneth Hulet, Earl F. Worden, and John G. Conway—506(MA*12*)
Cook, Bill D.
Interference patterns of ultrasonic optical gratings, Bill D. Cook—429
Cooke, Frank
Light-weight materials for optical instrumentation, Frank Cooke—524(T)(WC*11*)
Courville, G. E.
Stimulated emission of magnetic dipole radiation in electric discharges, P. J. Walsh and G. E. Courville—1043
Cownie, Allan R.
Formation of transmissionlike reflection fringes, Allan R. Cownie—425
Crampton, George S.
Necrology, George S. Crampton—652
Crawford, F. W.
Light output observations on low-pressure mercury-vapor discharges, F. W. Crawford and H. R. Pagels—734
Crevier, R.
Neodymium-glass-filter laser, E. Snitzer, R. Crevier, and F. Hoffman—515(TA*21*)
Crosby, Peter
Scattering of light in the lower atmosphere, Peter Crosby and Brian W. Koerber—358
Crowe, James W.
Effects of crystal structure and scattering centers on the light pattern and moding in ruby lasers, James W. Crowe—522(WB*13*)
Culver, William H.
Reduction of contrast by atmospheric boil, Seibert Q. Duntley, William H. Culver, Frances Richey, and Rudolph W. Preisendorfer—351
Cumming, Cameron
Stratospheric composition from infrared absorption spectra, Cameron Cumming—1335(WC*3*)
Curcio, J. A.
Transmission of ruby laser light through water, G. L. Knestrick and J. A. Curcio—514(TA*12*)
Curtis, J.
O_3 absorption by filter radiometry, L. F. Drummeter, Jr., and J. Curtis—516(TB*15*)
Curzon, F. L.
Image-smearing errors in framing camera photographs, F. L. Curzon and R. J. Churchill—1101
Czyzak, S. J.
Refractive indexes of single hexagonal ZnS and CdS crystals, T. M. Bieniewski and S. J. Czyzak—496(L)

Dainoff, Marvin J.
Quantitative estimates of saturation, Judith Wheeler Onley, Carl L. Klingberg, Marvin J. Dainoff, and Gary B. Rollman—487
Dalgarno, A.
Rayleigh scattering near an absorption line, A. Dalgarno —1223(L)
Dalton, Murphy L.
Limitations in the use of a Lambert's-law source model for radiation-transfer predictions, Murphy L. Dalton—1351(FB*19*)
Davidson, H. R.
Use of instruments for industrial color control, H. R. Davidson—1354(FE*1*)

Davidson, Richard M.
Spectral variation of index of refraction, Richard M. Davidson—1006(L)
Davis, Sumner P.
Hyperfine structure in the spectrum of mercury hydride, Terence L. Porter and Sumner P. Davis—338
Promethium 147 hyperfine structure under high resolution, Joseph Reader and Sumner P. Davis—431
Optical spectrum of $^{198}Hg^{m}$, Sumner P. Davis, Herbert Kleiman, and Tin Aung—506(MA*11*)
Hyperfine structures, isotope shifts, and nuclear moments of Hg^{195}, Hg^{195m}, and Hg^{194}, Herbert Kleiman and Sumner P. Davis—822
Optics Experiments and Demonstrations by C. Harvey Palmer. Book review by Sumner P. Davis—1116
Optical spectra of erbium, Louis C. Marquet and Sumner P. Davis—1349(FA*13*)
Daw, Harold A.
Investigation of laser modulation by modifying the internal reflection barrier, Harold A. Daw—915
De, M.
Diffraction images of circular phase objects in partially coherent light, M. De and S. C. Som—779
Deacle, Robert E.
Sulfur as a standard of reflectance in the infrared, Max Kronstein, Robert J. Kraushaar, and Robert E. Deacle—458
Deltenre, Ralph W.
Cirrus infrared reflection measurements, Richard K. McDonald and Ralph W. Deltenre—860
DePalma, J. J.
Optics of nonconservative turbid media: relationship of the scattering to the location of the absorber, R. N. Wolfe, J. J. DePalma, and S. B. Saunders—1353(FC*19*)
Deslattes, R. D.
Penning discharge as a source in the extreme ultraviolet, R. D. Deslattes, T. J. Peterson, Jr., and D. H. Tomboulian—302(L)
Diaz, F. A.
A weak telluric band of carbon dioxide, F. A. Diaz—203(L)
Dobrowolski, J. A.
Further developments in mica interference filters, J. A. Dobrowolski—1332(WB*15*)
Donath, Eric
Light-collecting properties of a perfect circular optical fiber, Robert J. Potter, Eric Donath, and Richard Tynan—256
Radial shearing interferometer, Eric Donath and Warren Carlough—395(L)
Donovan, T. M.
Effect of surface damage on the reflectance of germanium in the 3400- to 10 000-Å wavelength region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—519(TD*13*)
Reflectance of evaporated germanium films, T. M. Donovan and E. J. Ashley—1331(WB*12*)
Effect of surface damage on the reflectance of germanium in the 2650–10 000 Å region, T. M. Donovan, E. J. Ashley, and H. E. Bennett—1403
Dove, D. B.
Discussion of the longitudinal and transverse Kerr magneto-optic effects and their application to the study of magnetic films, D. B. Dove—525(WD*17*)
Dressel, Fred A.
Fred A. Dressel, Necrology—1330
Drougard, Renee
Optical-transfer properties of fiber bundles, Renee Drougard—507(MA*18*)
Drummeter, L. F., Jr.
Angular-reflectance properties of blackened aluminum honeycomb, L. F. Drummeter, Jr., and W. B. Fowler—511(MC*19*)
O_3 absorption by filter radiometry, L. F. Drummeter, Jr., and J. Curtis—516(TB*15*)
Dunkelman, Lawrence
Optical materials for the near and middle ultraviolet, Lawrence Dunkelman—524(T)(WC*14*)
Duntley, Seibert Q.
Light in the sea, Seibert Q. Duntley—214
Reduction of contrast by atmospheric boil, Seibert Q. Duntley, William H. Culver, Frances Richey, and Rudolph W. Preisendorfer—351
Dylewski, T. J.
Earth's albedo and atmospheric transmission from energy-balance calculations, T. J. Dylewski—1334(WA*16*)
Dyson, J.
Very stable common-path interferometers and applications, J. Dyson—690

Eddy, John A.
Light scattering by particles in the upper atmosphere, Gordon Newkirk, Jr., and John A. Eddy—1340(TB*11*)
Edse, Rudolph
Emission spectra excited in metal powder–oxygen flames, Rudolph Edse, K. Narahari Rao, W. A. Strauss, and M. E. Mickelson—436
Edwards, T. H.
Ground-state molecular constants of $H_2{}^{80}Se$, R. A. Hill and T. H. Edwards—516(TB*16*)
Einhorn, H. D.
Stray light in a monochromator (analysis and prediction based on measurements by means of discharge lamps and filters), H. D. Einhorn and D. E. H. Naudé—721
Eisenman, Wesley L.
Black radiation detector, W. L. Eisenman, R. L. Bates, and J. D. Merriam—729
Infrared photographic observation of the flash spectrum at the eclipse of 20 July 1963, Curtis J. Humphreys, Edward Paul, Jr., and Wesley L. Eisenman—1350(FA*20*)
Black-radiation detector: 1–40 μ, R. L. Bates and W. L. Eisenman—1355(FD*15*)
Eldering, Herman G.
Background model estimation, Herman G. Eldering—1341(TB*15*)
Ellis, Charles R.
Feedback stabilization of a xenon arc lamp for a stellar simulator—Charles R. Ellis—1344(TD*17*)
Ellis, W. P.
Optical properties of anodic-oxide interference films on uranium immersed in refractive media, W. P. Ellis and E. D. Megarity—519(TD*16*)
Immersion spectrophotometry of interference films: refractive indices of fluoride films on uranium dioxide and anodic oxide films on uranium metal, W. P. Ellis—613
El-Sayed, M. A.
Polarization of molecular luminescence in plastic media by the method of photoselection, M. A. El-Sayed—707
Elterman, Louis
Model of a clear standard atmosphere for attenuation in the visible and infrared windows, Louis Elterman—1337(WC*11*)
Elwell, W. T.
Atomic-Absorption Spectrophotometry by W. T. Elwell and J. A. F. Gidley. Book review by John R. Gould—501

Emmanuel, Constantinos B.
Determination of optical-thickness gradients from a far distance, Jurgen R. Meyer-Arendt, R. Bruce Herrick, and Constantinos B. Emmanuel—1344(TD*14*)
Engleman, Rolf, Jr.
Automatic comparator for measurement of line spectra, David W. Steinhaus and Rolf Engleman, Jr.—1349 (FA*15*)
Enoch, Jay M.
Optical properties of the retinal receptors, Jay M. Enoch —71
Validation of an indicator of mammalian retinal-receptor response: action spectrum, Jay M. Enoch—1335(WD*11*)
Erickson, Kent E.
Interferometric millimicrometer and flatness tester, Kent E. Erickson—526(WD*21*)
Erminy, Diamond E.
Scheme for obtaining integral and fractional multiples of a given radiance, Diamond E. Erminy—1448(L)
Ewald, A. W.
Optical constants from reflectance ratios by a geometric construction, Rolf E. Lindquist and A. W. Ewald—247

Farone, W. A.
Applicability of Rayleigh–Gans scattering to spherical particles, M. Kerker, W. A. Farone, and E. Matijevic —758(L)
Faust, W. L.
Optical maser action on dissociation of diatomic and polyatomic gases, C. K. N. Patel, R. A. McFarlane, and W. L. Faust—522(WB*12*)
Feldman, Charles
Polarized thermal emission of light from thin metal films, Charles Feldman and Michael Hacskaylo—636(L)
Fenlon, P. F.
Temperature dependence of photodetector response, G. F. Boesen, H. S. C. Chow, and P. F. Fenlon—1355(FD*16*)
Fialovszky, Lajos
Anwendung einer Differentialmethode und der Ausgleichungsrechnung zur Feinkorrektion optischer Systeme, Lajos Fialovszky—807
Finkel, Jack
Faraday rotation in a spin system, Jack Finkel—1115(L)
Fischel, Halbert
Design methods for radiative heating systems. I: Solar simulation, Halbert Fischel—1341(TB*19*)
Design methods for radiative heating systems. II. Re-entry heating and albedo simulation, Halbert Fischel—1341 (TB*20*)
Fischer, Heinz
Spectral emission from high-density submicrosecond arc channels, Heinz Fischer and Walter B. Rueppel—516 (TB*14*)
Fleck, H. G.
Quadrant multiplier phototube, Martin Rome, H. G. Fleck, and D. C. Hines—509(MB*18*)
Flom, Merton C.
Visual resolution and contour interaction, Merton C. Flom, Frank W. Weymouth, and Daniel Kahneman—1026
Foley, P. J.
Critical flicker frequency and phased surrounds, P. J. Foley—497(L)
Light time fraction and surround luminance in flicker, P. J. Foley—975
Fork, Richard L.
Optical dispersion in the vicinity of the Hg^3P_1—$^1S_0$ transition, Richard L. Fork—523(WB*15*)
Spherical-mirror interferometry of maser beams, D. Herriott, R. Fork, and H. Kogelnik—1339(TA*18*)
Forkner, John F.
Method of visualizing high-order spherical aberrations and OSC, John F. Forkner—512(MD*12*)
Fowler, W. B.
Angular-reflectance properties of blackened aluminum honeycomb, L. F. Drummeter, Jr., and W. B. Fowler— 511(MC*19*)
Frame, K.
Diffraction at dielectric and conducting apertures of a few-wavelength size, J. J. Burke, N. S. Kapany, and K. Frame—1332(WB*16*)
Francis, J. E.
Preliminary spectroscopic results on a very long, high-current, magnetically confined, vacuum carbon arc, J. R. McNally, Jr., M. R. Skidmore, J. E. Francis, P. M. Jenkins, and D. A. Griffin—495(L)
Françon, Maurice
Atlas of Optical Phenomena by Michel Cagnet, Maurice Françon, and Jean Claude Thrierr. Book review by F. W. Rosberry—881
Frank, Robert
Useful digital and analog approximations of the optical properties of overcasts, Robert Frank, Robert Hopfield, and Harold Stewart—517(TB*22*)
Franzen, Wolfgang
Nonisothermal superconducting bolometer: theory of operation, Wolfgang Franzen—596
Franzosa, Michael A.
Line strengths and spectral emissivities of nitric oxide vs temperature and amount of gas, Robert O'B. Carpenter and Michael A. Franzosa—516(TB*12*)
Fred, Mark
Preliminary-term analysis of the Np I spectrum, Mark Fred and Frank S. Tomkins—506(MA*13*)
Freeman, Mark P.
Determination of a radiance-coefficient profile from the observed asymmetric radiance distribution of an optically thin radiating medium, Mark P. Freeman and S. Katz —1172
Friedman, R. M.
Radiance of the upper atmosphere in the middle ultraviolet and in the near infrared, R. D. Rawcliffe, G. E. Meloy, R. M. Friedman, and R. L. Williams—1334(WA*13*)
Fry, Glenn A.
Retinal image formation: review, summary, and discussion, Glenn A. Fry—94
Coarseness of photographic grain, Glenn A. Fry—361
Resolving power of photographic emulsions, Glenn A. Fry —368
Physiological irradiation across the retina, Glenn A. Fry —1336(WD*14*)
Fujita, Tetsuya
Precise reduction of radiation data from meteorological satellites, Tetsuya Fujita—1331(WA*1*)
Fujiwara, Shiro
Refractive indices of evaporated cerium dioxide–cerium fluoride films, Shiro Fujiwara—880(L)
Refractive indices of evaporated cerium fluoride–zinc sulfide films, Shiro Fujiwara—1317(L)
Fussell, William B.
Thermal radiation from high explosives at sea level and at reduced pressure, William B. Fussell—509(MB*20*)
Total-reflectance measurements in the infrared and their relationship to thermal-emittance values, William B. Fussell—509(MB*21*)
Emissivity of a shallow cylinder with specularly reflecting walls, Nicholas Tomljanovich and W. B. Fussell— 1352(FC*13*)

Infrared spectral emissivity of a lanthanum-lutetium-doped glass at 400°C, W. B. Fussell and Ralph Stair—1352 (FC*15*)

Gamo, Hideya
Potentialities of optical-maser amplifiers in stellar correlation interferometry, Hideya Gamo—1347 (TF*14*)

Ganley, W. P.
Intermittent response of infrared photomultipliers, W. P. Ganley—297 (L)

Gardiner, Jean S.
Sensitivity of the retinal area in one eye corresponding to the blind spot in the other eye, Ernst Wolf and Jean S. Gardiner—1437

Gates, David M.
Computed transmission spectra for the 2.7-μ H_2O band and comparisons with observed spectra, David M. Gates—1334 (WC*2*)

George, T. V.
Scattering of ruby-laser light by gases, T. V. George, L. Slama, M. Yokoyama, and L. Goldstein—1347 (TF*13*)

Giaccheti, A.
Emission spectrum of protactinium between 2500 and 9200 Å, A. Giaccheti—506 (MA*14*)

Gibbons, Ian R.
Problem of visual excitation, George Wald, Paul K. Brown, and Ian R. Gibbons—20

Gidley, J. A. F.
Atomic-Absorption Spectrophotometry by W. T. Elwell and J. A. F. Gidley. Book review by John R. Gould—501

Giesecke, P.
Ultraviolet spectral distribution and aging characteristics of xenon arcs and filters, N. Z. Searle, P. Giesecke, R. Kinmonth, and R. C. Hirt—508 (MB*15*)

Gill, P.
Determination of the refractive indices of gases in the vacuum ultraviolet. II. The Rayleigh scattering method, P. Gill and D. W. O. Heddle—847

Giorgi, Amedeo
Effect of wavelength on the relationship between critical flicker frequency and intensity in foveal vision, Amedeo Giorgi—480

Givens, M. Parker
Interference of two light beams having a large path difference, M. Parker Givens—514 (TA*16*)
Reflectance of vitreous and metallic selenium in the vacuum ultraviolet, William L. Goffe and M. Parker Givens—804
Variation in time of flight of electrons through a photomultiplier, James D. Rees, Jr., and M. Parker Givens—1347 (TF*16*)

Gledhill, R. J.
Light absorption in heterogeneous systems with application to photographic dye images, R. J. Gledhill and D. B. Julian—239

Glenn, David P.
Ultraviolet absorption coefficients of four alkali halides, David P. Glenn and Stanley S. Ballard—517 (TB*21*)

Gliddon, Gordon
Gordon Gliddon, Necrology—893

Goffe, William L.
Reflectance of vitreous and metallic selenium in the vacuum ultraviolet, William L. Goffe and M. Parker Givens—804

Goldschmidt, Z. B.
Energy levels of Er II, Z. B. Goldschmidt—594

Goldstein, L.
Scattering of ruby-laser light by gases, T. V. George, L. Slama, M. Yokoyama, and L. Goldstein—1347 (TF*13*)

Goldstein, S.
Spatial enhancement of continuous negative afterimage phenomenon, S. Goldstein and R. J. Massa—761 (L)

Gordon, Howard
$02^{0}0$–$01^{1}0$ band of $N_2{}^{14}O$, T. K. McCubbin, Jr., and Howard Gordon—1345 (TE*13*)

Gould, Gordon
Laser wavelength and frequency standard, Gordon Gould and William R. Bennett, Jr.—515 (TA*19*)
Optical heterodyne detection of coherent light, S. F. Jacobs, P. Rabinowitz, J. T. LaTourette, and G. Gould—515 (TA*20*)

Gould, John R.
Atomic-Absorption Spectrophotometry by W. T. Elwell and J. A. F. Gidley. Book review by John R. Gould—501

Gouras, P.
Saturation of the rods, P. Gouras and R. D. Gunkel—1335 (WD*12*)

Graham, C. H.
Simple discriminatory functions: review, summary, and discussion, C. H. Graham—161
On some aspects of real and apparent visual movement, C. H. Graham—520 (WA*1*)/1019

Green, A. E. S.
Transmission of light along a slant path through the atmosphere, A. E. S. Green—1338 (WC*13*)

Green, Daniel G.
Dynamic responses of pupil reflex to various light stimuli, Daniel G. Green and Richard W. Jones—1336 (WD*15*)

Green, E. L.
Characteristics of a Q-switched ruby laser terminated by parallel roof prisms, E. L. Green, D. A. Reago, and M. Schoenfeld—1340 (TA*19*)

Green, Louis C.
Singly and doubly excited states of two-electron atomic ions, Louis C. Green, Eleanor K. Kolchin, and Norma C. Johnson—1349 (FA*18*)

Greenleaves, I.
Computations of light-scattering and extinction by spheres according to diffraction and geometrical optics, and some comparisons with the Mie theory, J. R. Hodkinson and I. Greenleaves—577

Greenler, Robert G.
Infrared study of adsorbed surface layers, Robert G. Greenler—516 (TB*17*)

Grey, David S.
Automated differential correction of optical-system designs, David S. Grey—512 (MD*13*)
Aberration theories for semiautomatic lens design by electronic computers. I. Preliminary remarks, David S. Grey—672
Aberration theories for semiautomatic lens design by electronic computers. II. A specific computer program, David S. Grey—677

Griffin, D. A.
Preliminary spectroscopic results on a very long, high-current, magnetically confined, vacuum carbon arc, J. R. McNally, Jr., M. R. Skidmore, J. E. Francis, P. M. Jenkins, and D. A. Griffin—495 (L)

Grum, F.
Spectral-energy distribution of daylight, H. R. Condit and F. Grum—1340 (TB*12*)

Gulledge, Irene S.
Luminance of the night airglow when observed from above the emitting layer, Irene S. Gulledge, M. J. Koomen, D. M. Packer, and R. Tousey—518 (TC*13*)

Gunkel, R. D.
Saturation of the rods, P. Gouras and R. D. Gunkel—1335 (WD*12*)

Gutmacher, Ralph G.
Self-luminescence spectrum of $Bk^{3+}(5f^8)$, Ralph G. Gutmacher, E. Kenneth Hulet, Earl F. Worden, and John G. Conway—506(MA*12*)
Guttmann, Henry E.
Shutter for vision experiments, Henry E. Guttmann—642(L)

Hacskaylo, Michael
Polarized thermal emission of light from thin metal films, Charles Feldman and Michael Hacskaylo—636(L)
Hagan, Lucy
Absolute oscillator strengths of C_2 Swan bands, Leo Brewer and Lucy Hagan—1345(TE*12*)
Hall, A. C.
Inexact Senarmont compensators, A. C. Hall—801
Hammond, Harry K., III
Reproducibility of relative spectral-irradiance data and chromaticity of fluorescent lamps, Harry K. Hammond, III—508(MB*12*)
Harding, G. O.
Effect of mode degeneracy on output of gaseous optical masers, G. O. Harding and Tingye Li—1339(TA*15*)
Harper, J. S.
Interferometric method of determining the separation between a moving and a static surface, J. S. Harper, P. B. Levenglick, and J. S. Wilczynski—1358(FF*15*)
Harper, Kennard W.
Fiber optics tracking-scanning system, Kennard W. Harper—507(MA*20*)
Harris, Louis
Optical and electrical properties of bismuth deposits, Louis Harris and John Piper—1271
Hart, K. H.
Vacuum wavelengths of Kr^{80}, Hg^{198}, and Cd^{114}, K. M. Baird, D. S. Smith, and K. H. Hart—717
Hartline, H. K.
Spatial and temporal aspects of retinal inhibitory interaction, Floyd Ratliff, H. K. Hartline, and William H. Miller—110
Hass, Georg
On the vacuum-ultraviolet reflectance of evaporated aluminum before and during oxidation, R. P. Madden, L. R. Canfield, and G. Hass—620
Increasing the far-ultraviolet reflectance of silicon-oxide-protected aluminum mirrors by ultraviolet irradiation, Alan P. Bradford and Georg Hass—1096
Hastings, J. Woodland
Total quantum flux of isotropic sources, J. Woodland Hastings and Gregorio Weber—1410
Hause, C. D.
Magnetic-rotation spectra of NO_2 in the near infrared, J. L. Aubel and C. D. Hause—515(TB*11*)
Hautot, A.
Determination of the modulation transfer function of photographic materials by the Fraunhofer diffraction methods, A. Hautot and S. Ooue—1356(FE*16*)
Heavens, Oliver S.
Some current developments in optical masers, Oliver S. Heavens—513(TA*1*)
Heddle, D. W. O.
Determination of the refractive indices of gases in the vacuum ultraviolet. I. The Čerenkov radiation method, D. W. O. Heddle, R. E. Jennings, and A. S. L. Parsons—840
Determination of the refractive indices of gases in the vacuum ultraviolet. II. The Rayleigh scattering method, P. Gill and D. W. O. Heddle—847

Heller, Zindel H.
Rowland ghosts observed with laser illumination, Zindel H. Heller—395(L)
Hellerstein, David
Application of the Senarmont polariscope to analysis of optical-maser light, David Hellerstein—515(TA*18*)
Helson, Harry
Studies of anomalous contrast and assimilation, Harry Helson—179
Hendeberg, L. O.
Dependence of the transfer function of photographic emulsion on the numerical aperture of the optical system, L. O. Hendeberg—1114(L)
Henderson, G.
Determination of the absolute phase change on reflection at chromium films, G. Henderson and C. Weaver—1331(WB*11*)
Herrick, R. Bruce
Determination of optical-thickness gradients from a far distance, Jurgen R. Meyer-Arendt, R. Bruce Herrick, and Constantinos B. Emmanuel—1344(TD*14*)
Achievement of absolute contrast enhancement by the photographic-masking technique, J. D. Armitage and R. B. Herrick—1356(FE*15*)
Herriott, D.
Spherical-mirror interferometry of maser beams, D. Herriott, R. Fork, and H. Kogelnik—1339(TA*18*)
Herzberger, Max
Some recent ideas in the field of geometrical optics, Max Herzberger—661
Field Theory Handbook, Including Coordinate Systems, Differential Equations and Their Solutions by P. Moon and D. E. Spencer. Book review by Dr. M. Herzberger—767
Hesser, Donald R.
Diffraction theory of image formation by total reflection, Donald R. Hesser and James F. McGee—525(WD*16*)
Hexter, R. M.
Excitation-modulation spectroscopy: a technique for obtaining vibrational spectra of excited electronic states, R. M. Hexter—703
Higgins, G. C.
Analysis of fine-detail reproduction in photographic systems, J. L. Simonds, J. R. Kelch, and G. C. Higgins—521(WA*19*)
Hildebrand, B. P.
Comments on "Properties of linear low-pass filters for nonnegative signals," B. P. Hildebrand—1223(L)
Hill, R. A.
Ground-state molecular constants of $H_2{}^{80}Se$, R. A. Hill and T. H. Edwards—516(TB*16*)
Hines, D. C.
Quadrant multiplier phototube, Martin Rome, H. G. Fleck, and D. C. Hines—509(MB*18*)
Hinnov, Einar
Measurement of absolute radiation intensities in the vacuum-ultraviolet region, Einar Hinnov and Fritz W. Hofmann—1259
Hirschberg, J. G.
Cladded laminar optics for the ultraviolet, J. G. Hirschberg—507(MA*19*)
Hirt, R. C.
Ultraviolet spectral distribution and aging characteristics of xenon arcs and filters, N. Z. Searle, P. Giesecke, R. Kinmonth, and R. C. Hirt—508(MB*15*)
Hodkinson, J. R.
Computations of light-scattering and extinction by spheres according to diffraction and geometrical optics, and some comparisons with the Mie theory, J. R. Hodkinson and I. Greenleaves—577

Hoffman, F.
Neodymium-glass-fiber laser, E. Snitzer, R. Crevier, and F. Hoffman—515(TA*21*)
Frequency control of a neodymium glass laser, E. Snitzer and F. Hoffman—1347(TF*12*)
Hofmann, Fritz W.
Measurement of absolute radiation intensities in the vacuum-ultraviolet region, Einar Hinnov and Fritz W. Hofmann—1259
Holzworth, George C.
Studies of skylight polarization, George C. Holzworth and C. R. Nagaraja Rao—1341(TB*14*)
Hopfield, Robert
Useful digital and analog approximations of the optical properties of overcasts, Robert Frank, Robert Hopfield, and Harold Stewart—517(TB*22*)
Houston, Agnes
Reciprocity relations between the transfer function and total illuminance. I, Richard Barakat and Agnes Houston—1244
Modulation of square-wave objects in incoherent light. I, Richard Barakat and Agnes Houston—1371
Houston, T. W.
Temperature dependence of the refractive index of optical maser crystals, T. W. Houston, L. F. Johnson, P. Kisliuk, and D. J. Walsh—1286
Howett, Gerald L.
Loci of discrepancy chromaticities for von Kries transformations, Gerald L. Howett—510(MC*13*)
Hu, Ming-kuei
Modified Zernike polynomials and their application to the analysis of Fresnel region fields of circular apertures with nonuniform and nonsymmetric illumination, Ming-kuei Hu—261
Hubbard, Eugene L.
Intensity of the scattered light in the wavelength region 2300–3100 Å, with oxygen and ozone absorption considered, Eugene L. Hubbard—1333(WA*12*)
Hubel, David H.
Integrative processes in central visual pathways of the cat, David H. Hubel—58
Huber, B.
Measurement of the muscle tremble associated with hand-held field glasses, H. Schober, U. Miller, and B. Huber —1336(WD*18*)
Hufnagel, R. E.
Modulation transfer function associated with image transmission through turbulent media, R. E. Hufnagel and N. R. Stanley—1338(WC*15*)
Hulet, E. Kenneth
Self-luminescence spectrum of $Bk^{3+}(5f^8)$, Ralph G. Gutmacher, E. Kenneth Hulet, Earl F. Worden, and John G. Conway—506(MA*12*)
Hull, R. J.
$^8S_1$ hyperfine-structure separations and isotope shifts of radioactive Cd^{107}, Cd^{109}, and of stable Cd isotopes, R. J. Hull and H. H. Stroke—1147
Humphrey, J. N.
Performance of lead-sulfide detectors at reduced temperatures, J. N. Humphrey—1355(FD*19*)
Humphreys, Curtis J.
Exploration of the 1- to 4-μ region and its significance for atomic emission spectroscopy, Curtis J. Humphreys—506(MA*1*)
Direct color photography of the solar eclipse of 20 July 1963, George H. Moore and Curtis J. Humphreys—1349(FA*19*)
Infrared photographic observation of the flash spectrum at the eclipse of 20 July 1963, Curtis J. Humphreys, Edward Paul, Jr., and Wesley L. Eisenman—1350(FA*20*)
Hunter, Richard S.
Tests for the uniformity of 45° 0° reflectometers, Richard S. Hunter—390
Hurvich, Leo M.
Contributions to color-discrimination theory: review, summary, and discussion, Leo M. Hurvich—196

Ikeda, Mitsuo
Study of interrelations between mechanisms at threshold, Mitsuo Ikeda—1305
Imbusch, G. F.
Some techniques in interferometry with optical masers, H. W. Moos and G. F. Imbusch—514(TA*15*)
Ivey, Henry F.
Absorption of nonparallel radiation, Henry F. Ivey—234
Color and efficiency of luminescent light sources, Henry F. Ivey—511(MC*15*)/1185

Jackson, D. A.
Resolving power in the near infrared of the Fabry-Perot interferometer with gold and with silver coatings, D. A. Jackson and K. Narahari Rao—558
Jackson, John K.
New standard of spectral-radiant intensity, Ralph Stair, William Schneider, and John K. Jackson—508(MB*13*)
Jacobs, S. F.
Optical heterodyne detection of coherent light, S. F. Jacobs, P. Rabinowitz, J. T. LaTourette, and G. Gould —515(TA*20*)
Jacobus, Gordon F.
Reflecting films of platinum for the vacuum ultraviolet, Gordon F. Jacobus, Robert P. Madden, and L. Randall Canfield—1084
Jaffe, Halina
Atlas of Analysis Lines by Halina Jaffe with technical assistance from N. Turkeltaub. Book review by Marvin Margoshes—767
Japan Electron Optics Laboratory Company, Ltd., Publisher
The World Through the Electron Microscope. Four volumes: (1) Metals (1959); (2) Chemistry (1960); (3) Biology (1961); (4) Metallurgy (1962) published by Japan Electron Optics Laboratory Company, Ltd. Book review by H. F. McMurdie—1117
Jenkins, P. M.
Preliminary spectroscopic results on a very long, high-current, magnetically confined, vacuum carbon arc, J. R. McNally, Jr., M. R. Skidmore, J. E. Francis, P. M. Jenkins, and D. A. Griffin—495(L)
Jennings, R. E.
Determination of the refractive indices of gases in the vacuum ultraviolet. I. The Čerenkov radiation method, D. W. O. Heddle, R. E. Jennings, and A. S. L. Parsons—840
Jhirad, D. J.
Diffraction of a plane wave by a sequence of identical coaxial apertures, D. J. Jhirad and J. S. Wilczynski—1347(TF*17*)
Johnson, L. F.
Temperature dependence of the refractive index of optical maser crystals, T. W. Houston, L. F. Johnson, P. Kisliuk, and D. J. Walsh—1286
Johnson, Norma C.
Singly and doubly excited states of two-electron atomic ions, Louis C. Green, Eleanor K. Kolchin, and Norma C. Johnson—1349(FA*18*)
Jones, H. W.
Design and performance of an absolute spectral radiometer, H. W. Jones, W. D. Perkins, and E. H. Siegler, Jr.—1354(FD*11*)

Jones, R. Clark
Terminology in photometry and radiometry, R. Clark Jones—1314(L)
Jones, Richard W.
High-resolution optometer for the continuous measurement of accommodation errors, Jay Warshawsky and Richard W. Jones—520(WA*12*)
Dynamic responses of pupil reflex to various light stimuli, Daniel G. Green and Richard W. Jones—1336(WD*15*)
Jonsson, V. K.
Radiant emission characteristics of diffuse conical cavities, E. M. Sparrow and V. K. Jonsson—816
Jørgensen, Chr. Klixbüll
Orbitals in Atoms and Molecules, by Chr. Klixbüll Jørgensen. Book review by Harry C. Allen, Jr.—1224
Juenker, D. W.
Optical investigation of molybdenum films, C. T. Raymo and D. W. Juenker—1332(WB*13*)
Reflectance of refractory metals in the extreme ultraviolet, L. J. LeBlanc and D. W. Juenker—1352(FC*12*)
Julesz, Bela
Stereopsis and binocular rivalry of contours, Bela Julesz —994
Effects of contour flicker or apparent motion on retinally stabilized images, Bela Julesz—1336(WD*17*)
Julian, D. B.
Light absorption in heterogeneous systems with application to photographic dye images, R. J. Gledhill and D. B. Julian—239

Kahneman, Daniel
Visual resolution and contour interaction, Merton C. Flom, Frank W. Weymouth, and Daniel Kahneman—1026
Kaminow, I. P.
Electro-optic effect in GaAs, E. H. Turner and I. P. Kaminow—523(WB*16*)
Balanced optical discriminator, I. P. Kaminow—1344 (TD*16*)
Kane, J.
Low-loss optical guided modes, J. Kane and H. Osterberg —507(MA*17*)
Kantor, Wallace
Erratum: Direct first-order experiment on the propagation of light from a moving source, Wallace Kantor [52, 978 (1962)]—310
Kantorski, J. W.
Single-mode glass laser, C. G. Young and J. W. Kantorski —1339(TA*16*)
Kapany, N. S.
Fiber optics. X. Evanescent boundary wave propagation, N. S. Kapany, J. J. Burke, and C. C. Shaw—929
Diffraction at dielectric and conducting apertures of a few-wavelength size, J. J. Burke, N. S. Kapany, and K. Frame—1332(WB*16*)
Measurement of diffuse frequency response of fused fiber optics, N. S. Kapany and D. J. Ruggieri—1332(WB*17*)
Image synthesis, N. S. Kapany and N. A. Peppers—1343(TC*20*)
Laser photocoagulators, N. A. Peppers, N. S. Kapany, and N. Silbertrust—1347(TF*15*)
Karczewski, B.
Boundary wave in electromagnetic theory of diffraction, B. Karczewski—878(L)
Kastler, Alfred
Displacement of energy levels of atoms by light, Alfred Kastler—902
Kastner, S. O.
Image construction for concave gratings at grazing incidence, by ray tracing, S. O. Kastner and W. M. Neupert —1180
Katz, S.
Determination of a radiance-coefficient profile from the observed asymmetric radiance distribution of an optically thin radiating medium, Mark P. Freeman and S. Katz —1172
Kawabata, Heiichiro
Changes in the human electroretinogram during early dark adaptation, Heiichiro Kawabata—386
Kear, B. H.
Color contrast from birefringent arrays of edge dislocations using a full-wave plate, S. Mendelson and B. H. Kear—250
Keck, Paul Henry
Paul Henry Keck, Necrology—1010
Keegan, Harry J.
Absorption spectra of the lanthanide series of rare-earth glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—517(TB*20*)
Absorption spectra of the first transition series in phosphate glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, V. R. Weidner, and Carol Ann Smith—1353(FC*17*)
Further progress towards development of a single filter for the wavelength calibration of spectrophotometers between 0.25 and 2.6 μ, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—1353(FC*18*)
Kelch, J. R.
Analysis of fine-detail reproduction in photographic systems, J. L. Simonds, J. R. Kelch, and G. C. Higgins—521(WA*19*)
Kellen, Paul F.
Experimental determination of the degree of coherence $\gamma_{12}(o)$, Edmund L. Bouché and Paul F. Kellen—1356(FB*14*)
Kelly, D. H.
Axicons, annuli, and coherent light, D. H. Kelly—525(WD*12*)
Kelly, Kenneth L.
Lines of constant correlated color temperature based on MacAdam's (u,v) uniform chromaticity transformation of the CIE diagram, Kenneth L. Kelly—999
Kerker, M.
Applicability of Rayleigh–Gans scattering to spherical particles, M. Kerker, W. A. Farone, and E. Matijevic—758(L)
Kessler, Karl G.
Wavelength of Hg^{198} Zeeman filter relative to that of the 2537-Å absorption line of an atomic beam, Walter G. Schweitzer, Jr., and Karl G. Kessler—1382
Kiess, C. C.
Studies in Optics by A. A. Michelson. Book review by C. C. Kiess—882
Kim, Pil Hyon
Stimulated emission from Nd^{3+} in glass rod, Susumu Namba and Pil Hyon Kim—1447(L)
King, W. H.
Comments on the article "Peculiarities of the isotope shift in the samarium spectrum," W. H. King—638(L)
Kinmonth, R.
Ultraviolet spectral distribution and aging characteristics of xenon arcs and filters, N. Z. Searle, P. Giesecke, R. Kinmonth, and R. C. Hirt—508(MB*15*)
Kisliuk, P.
Temperature dependence of the refractive index of optical maser crystals, T. W. Houston, L. F. Johnson, P. Kisliuk, and D. J. Walsh—1286

Kleiman, Herbert
Optical spectrum of $^{196}Hg^{m}$, Sumner P. Davis, Herbert Kleiman, and Tin Aung—506(MA*11*)
Hyperfine structures, isotope shifts, and nuclear moments of Hg^{199}, Hg^{195m}, and Hg^{194}, Herbert Kleiman and Sumner P. Davis—822
Klingberg, Carl L.
Quantitative estimates of saturation, Judith Wheeler Onley, Carl L. Klingberg, Marvin J. Dainoff, and Gary B. Rollman—487
Klucher, Thomas M.
Interference fringes with long path difference using He–Ne laser, Tadashi Morokuma, Karl F. Nefflen, T. R. Lawrence, and Thomas M. Klucher—394(L)
Kneisly, John A., II
Method of determining the principal curvatures of a wavefront propagating through an optical system, John A. Kneisly, II—512(MD*11*)
Knestrick, G. L.
Transmission of ruby laser light through water, G. L. Knestrick and J. A. Curcio—514(TA*12*)
Koerber, Brian W.
Scattering of light in the lower atmosphere, Peter Crosby and Brian W. Koerber—358
Koester, Charles J.
Fiber laser as a light amplifier, Charles J. Koester and Elias Snitzer—515(TA*22*)
Kogelnik, H.
Spherical-mirror interferometry of maser beams, D. Herriott, R. Fork, and H. Kogelnik—1339(TA*18*)
Continuous helium neon red laser as a Raman source, H. Kogelnik and S. P. S. Porto—1446(L)
Kolchin, Eleanor K.
Singly and doubly excited states of two-electron atomic ions, Louis C. Green, Eleanor K. Kolchin, and Norma C. Johnson—1349(FA*18*)
Koomen, M. J.
Luminance of the night airglow when observed from above the emitting layer, Irene S. Gulledge, M. J. Koomen, D. M. Packer, and R. Tousey—518(TC*13*)
Korbel, Harold
Radiant exposure, Harold Korbel and Thomas I. Monahan—400(L)
Kossel, Dierick
Interference photocathodes, Dierick Kossel—1355(FD*18*)
Kraushaar, Robert J.
Sulfur as a standard of reflectance in the infrared, Max Kronstein, Robert J. Kraushaar, and Robert E. Deacle—458
Krauskopf, John
Effect of retinal image stabilization on the appearance of heterochromatic targets, John Krauskopf—741
Effects of chromatic adaptation on normal and dichromatic red–green brightness matches, Roseanne G. Speelman and John Krauskopf—1103
Kreidl, Norbert J.
Modern Aspects of the Vitreous State. Volume 2 edited by J. D. Mackenzie. Book review by Norbert J. Kreidl—1009
Krogdahl, Wasley S.
Basic Physics of the Solar System by V. M. Blanco and S. W. McCuskey. Book review by Wasley S. Krogdahl—766
Kronstein, Max
Sulfur as a standard of reflectance in the infrared, Max Kronstein, Robert J. Kraushaar, and Robert E. Deacle—458
Kupperian, James E., Jr.
Optical problems in space, James E. Kupperian, Jr.—518(T)(TC*1*)
LaBaw, K. B.
Transmittance measurements of optical materials as affected by wedge angle and refractive index in the 2- to 15-μ range, K. B. LaBaw, A. L. Olsen, and L. W. Nichols—519(TD*12*)
Lansraux, Guy
Improvement by amplitude filters of optical systems' performances, Guy Lansraux—1342(TC*12*)
Larmore, Lewis
New technique for solar chromospheric observations, Lewis Larmore—518(TC*11*)
LaRussa, Joseph A.
Binocular wide-angle eyepiece systems, Martin Shenker and Joseph A. LaRussa—513(MD*17*)
LaTourette, J. T.
Optical heterodyne detection of coherent light, S. F. Jacobs, P. Rabinowitz, J. T. LaTourette, and G. Gould—515(TA*20*)
Lawrence, T. R.
Interference fringes with long path difference using He–Ne laser, Tadashi Morokuma, Karl F. Nefflen, T. R. Lawrence, and Thomas M. Klucher—394(L)
Lax, Benjamin
Masers and magneto-optics, Benjamin Lax—1338(TA*1*)
LeBlanc, L. J.
Reflectance of refractory metals in the extreme ultraviolet, L. J. LeBlanc and D. W. Juenker—1352(FC*12*)
Leebeek, H. J.
Foveal sensitivity of the human eye in the near infrared, P. L. Walraven and H. J. Leebeek—765(L)
Leite, R. C. C.
Continuous photoelectric recordings of the gas-laser-excited Raman effect, S. P. S. Porto and R. C. C. Leite—1503(TD*2*)
Leith, Emmett N.
Wavefront reconstruction with continuous-tone transparencies, Emmett N. Leith and Juris Upatnieks—522(WA*21*)
Wavefront reconstruction with continuous-tone objects, Emmett N. Leith and Juris Upatnieks—1377
Lempicki, Alexander
Fluorescence of solutions of β-diketone europium chelates, Charles Brecher, Alexander Lempicki, and Harold Samelson—1346(TE*15*)
Lesnick, James P.
Coaxial laser pumps, Charles H. Church, Derek Ryan, and James P. Lesnick—514(TA*11*)
Lev, David
Transfer functions and total illuminance of high numerical aperture systems obeying the sine condition, Richard Barakat and David Lev—324
Levenglick, P. B.
Interferometric method of determining the separation between a moving and a static surface, J. S. Harper, P. B. Levenglick, and J. S. Wilczynski—1358(FF*15*)
Levin, Elgie
Application of apodization to increase two-point resolution by the Sparrow criterion. II. Incoherent illumination, Richard Barakat and Elgie Levin—274
Levinson, John
Nonlinearity of flicker perception, John Levinson—521(WA*14*)
Levinstein, Henry
Infrared detectors, Henry Levinstein—1354(FD*1*)
Lewis, Edward L.
Tristimulus colorimeter for large-sample viewing, Joseph S. Lord and Edward L. Lewis—1356(FE*12*)
Li, Tingye
Effect of mode degeneracy on output of gaseous optical masers, G. O. Harding and Tingye Li—1339(TA*15*)

Lichtenstein, M.
Spatio-temporal factors in cessation of smooth apparent motion, M. Lichtenstein—304(L)
Lindquist, Rolf E.
Optical constants from reflectance ratios by a geometric construction, Rolf E. Lindquist and A. W. Ewald—247
Little, Angela C.
Evaluation of single-number expressions of color difference, Angela C. Little—293
Color measurement of foods, Angela C. Little—512(MC*20*)
Color of Foods by Gordon Mackinney and Angela C. Little. Book review by Dorothy Nickerson—643
Lohmann, A.
Theta modulation in optics, A. Lohmann—1351(FB*16*)
Long, Charles, II
Hypodermic microscope using fiber optics—an instrument to observe living tissue, Charles Long, II, A. Brushenko, and D. A. Pontarelli—1333(WB*20*)
Lord, Joseph S.
Tristimulus colorimeter for large-sample viewing, Joseph S. Lord and Edward L. Lewis—1356(FE*12*)
Lostis, P.
Study of the optical and electrical properties of thin films of palladium, F. Abeles, P. Lostis, and I. Wilmanns—1332(WB*14*)
Love, B.
Reactions of carotenoids and secondary amines, J. C. Peskin and B. Love—1335(WD*13*)
Lovins, Gerald H.
High-precision pointing interferometer, Gerald H. Lovins—1358(FF*18*)
Lyle, J. W.
Refractive index of strontium molybdate synthetic single crystal, J. W. Lyle—637(L)
Lynch, D. W.
Indexes of refraction of Mg_2Si, Mg_2Ge, and Mg_2Sn, D. McWilliams and D. W. Lynch—298(L)

MacAdam, David L.
Do oxygen and water vapor fluoresce?, David L. MacAdam—397(L)
Nonlinear relations of psychometric scale values to chromaticity differences, David L. MacAdam—754
Chromatic adaptation. II. Nonlinear hypothesis, David L. MacAdam—1441
Mackenzie, J. D.
Modern Aspects of the Vitreous State. Volume 2 edited by J. D. Mackenzie. Book review by Norbert J. Kreidl—1009
Mackinney, Gordon
Color of Foods by Gordon Mackinney and Angela C. Little. Book review by Dorothy Nickerson—643
MacKinnon, G. Ernest
Variation of directional components of autokinetic movement with position of the eye in the orbit, Leonard Matin, Douglas Pearce, and G. Ernest MacKinnon—521(WA*17*)
Mackinnon, L.
A Textbook on Light at an Introductory Level by L. Mackinnon. Book review by E. Scott Barr—767
MacNeill, Catherine
Infrared transmittance of rhombic sulfur, Catherine MacNeill—398(L)
MacNichol, Edward F., Jr.
Functional basis for "on"-center and "off"-center receptive fields in the retina, Henry G. Wagner, Edward F. MacNichol, Jr., and Myron L. Wolbarsht—66
Madden, Robert P.
On the vacuum-ultraviolet reflectance of evaporated aluminum before and during oxidation, R. P. Madden, L. R. Canfield, and G. Hass—620
Reflecting films of platinum for the vacuum ultraviolet, Gordon F. Jacobus, Robert P. Madden, and L. Randall Canfield—1084
Mahan, A. I.
Far-field diffraction and polarization properties of a three-dimensional hollow, homogeneous, isotropic cone, A. I. Mahan and L. P. Bone—533
Maker, P. D.
Optical third harmonic generation, P. D. Maker, R. W. Terhune, and C. M. Savage—523(WB*17*)
Maki, Arthur G.
Broadening of the ν_3 lines of HCN due to argon, carbon dioxide, and hydrogen chloride, Robert J. Thibault, Arthur G. Maki, and Earle K. Plyler—1255
Malkmus, W.
Infrared emissivity of carbon dioxide (4.3-μ band), W. Malkmus—951
Mandel, L.
Detection of laser radiation, L. Mandel and E. Wolf—1315(L)
Marchant, J. C.
Exposure criteria for the photographic detection of threshold signals, J. C. Marchant—1356(FE*13*)
Margoshes, Marvin
Atlas of Analysis Lines by Halina Jaffe with technical assistance from N. Turkeltaub. Book review by Marvin Margoshes—767
Marimont, Rosalind B.
Linearity and the mach phenomenon, Rosalind B. Marimont—400(L)
Marquet, Louis C.
Optical spectra of erbium., Louis C. Marquet and Sumner P. Davis—1349(FA*13*)
Marquis, Dennis C.
Role of optical and infrared systems on the Atlantic Missile Range, Dennis C. Marquis and Stanley S. Ballard—518(TC*14*)
Marshall, T.
Intensity distribution in unresolved electronic bands of diatomic and symmetric-top molecules, T. Marshall—439
Martin, William C.
Low energy levels of neutral cerium (Ce I), William C. Martin—1047
Masket, A. V. H.
Tables of Solid Angles by A. V. H. Masket and William C. Rodgers. Book review by Charles S. Williams—1009
Massa, R. J.
Spatial enhancement of continuous negative afterimage phenomenon, S. Goldstein and R. J. Massa—761(L)
Matijevic, E.
Applicability of Rayleigh–Gans scattering to spherical particles, M. Kerker, W. A. Farone, and E. Matijevic—758(L)
Matin, Leonard
Variation of directional components of autokinetic movement with position of the eye in the orbit, Leonard Matin, Douglas Pearce, and G. Ernest MacKinnon—521(WA*17*)
Mayer, Harris L.
Eyeburn damage calculation for an exoatmospheric nuclear event, Harris L. Mayer and Frances Richey—1333(WB*19*)
Mazurowski, M.
Attenuation of photographic contrast by the atmosphere, M. Mazurowski and R. Sink—1338(WC*14*)

McBride, William R.
Optical materials for transmission filters in the middle ultraviolet, William R. McBride—519(TD*14*)
Transmittance of single-crystal magnesium fluoride and IRTRAN-1 in the 0.2- to 15-μ range, Allen L. Olsen and William R. McBride—1003(L)
Composite narrow-band filters for the near and middle ultraviolet, William R. McBride—1352(FC*11*)

McCaa, David J.
Infrared resonance fluorescence in gases, Dudley Williams and David J. McCaa—516(TB*13*)
Vibrational fluorescence of carbon monoxide, David J. McCaa and Dudley Williams—1345(TE*14*)

McCamy, Calvin S.
New principle of absolute photometry, Calvin S. McCamy—511(MC*16*)
Polaroid Land Photography Manual by Ansel Adams. Book review by C. S. McCamy—1117

McCarthy, Donald E.
Variable-angle specular-reflectance in the infrared, Donald E. McCarthy—1357(FE*19*)

McCauley, D. G.
Low-power light modulators, B. O. Seraphin and D. G. McCauley—523(WB*20*)

McClung, F. J.
Stimulated Raman-scattering thresholds from absolute Raman-scattering cross sections, F. J. McClung and D. Weiner—523(WB*18*)

McCormick, W. W.
Determination of the spectral response of a resistance-strip magnetic photomultiplier in the extreme ultraviolet, G. T. Oser, W. W. McCormick, and R. A. Sawyer—1344(TD*11*)

McCubbin, T. K., Jr.
High-resolution vacuum echelle infrared spectrometer, T. K. McCubbin, Jr.—516(TB*18*)
$02^{0}0$–$01^{1}0$ band of $N_2{}^{14}O$, T. K. McCubbin, Jr., and Howard Gordon—1345(TE*13*)

McCuskey, S. W.
Basic Physics of the Solar System by V. M. Blanco and S. W. McCuskey. Book review by Wasley S. Krogdahl—766

McDonald, Richard K.
Cirrus infrared reflection measurements, Richard K. McDonald and Ralph W. Deltenre—860

McFarlane, R. A.
Optical maser action on dissociation of diatomic and polyatomic gases, C. K. N. Patel, R. A. McFarlane, and W. L. Faust—522(WB*12*)

McGee, J. D.
Advances in Electronics and Electron Physics—Vol. 16: Photo-Electronic Image Devices edited by J. D. McGee. Book review by Pierre Mertz—1224

McGee, James F.
Diffraction theory of image formation by total reflection, Donald R. Hesser and James F. McGee—525(WD*16*)

McKinley, Harry R.
Ultraviolet rocket spectrophotometer, Harry R. McKinley—518(TC*12*)

McKnight, R. V.
Far-infrared-transmission filter gratings, K. D. Möller and R. V. McKnight—760(L)

McMurdie, H. F.
The World Through the Electron Microscope. Four volumes: (1) Metals (1959); (2) Chemistry (1960); (3) Biology (1961); (4) Metallurgy (1962) published by Japan Electron Optics Laboratory Company, Ltd. Book review by H. F. McMurdie—1117

McNally, J. R., Jr.
Preliminary spectroscopic results on a very long, high-current, magnetically confined, vacuum carbon arc, J. R. McNally, Jr., M. R. Skidmore, J. E. Francis, P. M. Jenkins, and D. A. Griffin—495(L)

McQuaid, Richard W.
Laser modulation with hexamethylenetetramine, Richard W. McQuaid and Melvin C. Watkins—1339(TA*17*)

McQuistan, R. B.
Infrared modulation by free-carrier absorption, R. B. McQuistan and J. W. Schultz—524(WB*21*)

McWilliams, D.
Indexes of refraction of Mg_2Si, Mg_2Ge, and Mg_2Sn, D. McWilliams and D. W. Lynch—298(L)

Medlin, W. L.
Emission centers in thermoluminescent calcite, dolomite, magnesite, aragonite, and anhydrite, W. L. Medlin—1276

Megarity, E. D.
Optical properties of anodic-oxide interference films on uranium immersed in refractive media, W. P. Ellis and E. D. Megarity—519(TD*16*)

Mehta, C. L.
Spatial coherence of blackbody radiation, C. L. Mehta—509(MB*16*)

Mellon, M. G.
Absorption Spectroscopy by Robert P. Bauman. Book review by M. G. Mellon—501

Meloy, G. E.
Radiance of the upper atmosphere in the middle ultraviolet and in the near infrared, R. D. Rawcliffe, G. E. Meloy, R. M. Friedman, and R. L. Williams—1334(WA*13*)

Mendelson, S.
Color contrast from birefringent arrays of edge dislocations using a full-wave plate, S. Mendelson and B. H. Kear—250

Mergerian, D.
Pumping efficiency of neodymium-doped glass and $CaWO_4$ under narrow-band illumination, D. Mergerian—1339(TA*14*)

Merriam, J. D.
Black radiation detector, W. L. Eisenman, R. L. Bates, and J. D. Merriam—729

Mertens, Frederick P.
Some observations on the use of elliptically polarized light to study metal surfaces, Frederick P. Mertens, Paul Theroux, and Robert C. Plumb—788

Mertz, Pierre
Physica Status Solidi, K. W. Böer, Editor-in-Chief. Book review by Pierre Mertz—645
Advances in Electronics and Electron Physics—Vol. 16: Photo-Electronic Image Devices edited by J. D. McGee. Book review by Pierre Mertz—1224

Meyer-Arendt, Jurgen R.
Evaluation of plane mirrors by contrast transfer, Jurgen R. Meyer-Arendt—812
Determination of optical-thickness gradients from a far distance, Jurgen R. Meyer-Arendt, R. Bruce Herrick, and Constantinos B. Emmanuel—1344(TD*14*)

Michelson, A. A.
Studies in Optics by A. A. Michelson. Book review by C. C. Kiess—882

Mickelson, M. E.
Emission spectra excited in metal powder–oxygen flames, Rudolph Edse, K. Narahari Rao, W. A. Strauss, and M. E. Mickelson—436

Middleton, W. E. K.
Count Rumford, Physicist Extraordinary by Sanborn C. Brown. Book review by W. E. K. Middleton—768

Miles, Clifford L.
Sine-wave zone plate—introductory study, Clifford L. Miles—1350(FB*12*)
Miller, U.
Measurement of the muscle tremble associated with hand-held field glasses, H. Schober, U. Miller, and B. Huber —1336(WD*18*)
Miller, William H.
Spatial and temporal aspects of retinal inhibitory interaction, Floyd Ratliff, H. K. Hartline, and William H. Miller—110
Minnhagen, Lennart
Configuration interaction between $sp^6\,{}^2S_{\frac{1}{2}}$ and $s^2p^4({}^1D_2)d\,{}^2S_{\frac{1}{2}}$, Lennart Minnhagen—1349(FA*17*)
Mokhtar, S.
On the factors contributing to the formation of multiple-beam Fizeau fringes, N. Barakat and S. Mokhtar—300(L)
Experimental determination of phase change at reflection from glass–metallic layer interface using a Koster interference comparator, N. Barakat and S. Mokhtar—1153
Möller, K. D.
Far-infrared-transmission filter gratings, K. D. Möller and R. V. McKnight—760(L)
Monahan, Thomas I.
Radiant exposure, Harold Korbel and Thomas I. Monahan—400(L)
Moon, P.
Field Theory Handbook, Including Coordinate Systems, Differential Equations and Their Solutions by P. Moon and D. E. Spencer. Book review by Dr. M. Herzberger —767
Mooney, C. Frank
Optical multiplication interferometer system for continuous position control or measurement over large distances, C. Frank Mooney and Bertram L. Barlow—1358(FF*16*)
Moore, George H.
Direct color photography of the solar eclipse of 20 July 1963, George H. Moore and Curtis J. Humphreys—1349(FA*19*)
Moos, H. W.
Some techniques in interferometry with optical masers, H. W. Moos and G. F. Imbusch—514(TA*15*)
Morgenstern, B.
Optical spatial-frequency-bandwidth extension in two dimensions beyond the classical limit, D. P. Paris and B. Morgenstern—1342(TC*14*)
Morokuma, Tadashi
Interference fringes with long path difference using He–Ne laser, Tadashi Morokuma, Karl F. Nefflen, T. R. Lawrence, and Thomas M. Klucher—394(L)
Mowbray, G. H.
Influence of size and brightness parameters on the differential sensitivity of the central retina to photic flicker, Tapas K. Sen and G. H. Mowbray—750
Mueller, Conrad G.
Some properties of excitation in the visual system, Conrad G. Mueller—1335(WD*1*)
Murthy, N. Sreedhara
On the relative transition probabilities of BeO($B^1\Sigma^+ - X^1\Sigma^+$) system, N. R. Tawde and N. Sreedhara Murthy —298(L)
Murty, M. V. R. K.
Some variations of the Jamin interferometer useful in optical testing, M. V. R. K. Murty—526(WD*19*)
Common path interferometer using Fresnel zone plates, M. V. R. K. Murty—568
Compact radial-shearing interferometer using Snell's law of refraction, M. V. R. K. Murty—1358(FF*17*)
Myszko, R.
Effect of vibration on the photographic image, R. Myszko —935
Nachmias, Jacob
Study of absolute visual detection by the rating-scale method, Jacob Nachmias and Robert M. Steinman—1206
Nagano, Yoichi
Photoelectric measurement of polarized light by means of ADP polarization modulator. Part VI. Automatic measurement of carriage nutation, Hiroshi Takasaki, Tadao Shimodaira, and Yoichi Nagano—640(L)
Namba, Susumu
Stimulated emission from Nd^{3+} in glass rod, Susumu Namba and Pil Hyon Kim—1447(L)
Nardone, Maria C.
Free–free continuum of oxygen. II. Effect of polarization and exchange, R. G. Breene, Jr., and Maria C. Nardone —924
Nassau, K.
Coupled substitution in calcium tungstate laser materials, K. Nassau—1339(TA*12*)
Naudé, D. E. H.
Stray light in a monochromator (analysis and prediction based on measurements by means of discharge lamps and filters), H. D. Einhorn and D. E. H. Naudé—721
Nayatani, Y.
Color of daylight from north sky, Y. Nayatani and G. Wyszecki—511(MC*18*)/626
Color of fluorescent paints, Y. Nayatani and G. Wyszecki —744
Nefflen, Karl F.
Interference fringes with long path difference using He–Ne laser, Tadashi Morokuma, Karl F. Nefflen, T. R. Lawrence, and Thomas M. Klucher—394(L)
Nelson, D. F.
Optical maser action in a flux-grown ruby, D. F. Nelson and J. P. Remeika—522(WB*11*)
Neugebauer, H. E. J.
Adjacency effects in xerography, H. E. J. Neugebauer—1357(FE*17*)
Neupert, W. M.
Image construction for concave gratings at grazing incidence, by ray tracing, S. O. Kastner and W. M. Neupert—1180
Newkirk, Gordon, Jr.
Light scattering by particles in the upper atmosphere, Gordon Newkirk, Jr., and John A. Eddy—1340(TB*11*)
Newman, Alfred
Measurement of the total illuminance in a diffraction image. I. Point sources, Richard Barakat and Alfred Newman—1365
Nichols, L. W.
Transmittance measurements of optical materials as affected by wedge angle and refractive index in the 2- to 15-μ range, K. B. LaBaw, A. L. Olsen, and L. W. Nichols—519(TD*12*)
Nickerson, Dorothy
Color of Foods by Gordon Mackinney and Angela C. Little. Book review by Dorothy Nickerson—643
Nicodemus, F. E.
Spectral responsivity of radiometers, G. J. Zissis and F. E. Nicodemus—509(MB*17*)
Nicola, John F.
Future optical instrumentation for the Atlantic Missile Range, John F. Nicola—518(TC*15*)
Nimeroff, I.
Field trial of the 1959 CIE standard observer proposal, I. Nimeroff—511(MC*14*)

Noell, Werner K.
Cellular physiology of the retina, Werner K. Noell—36
Nomarski, Georges
Single-point-reference interferometer—general theory, Georges Nomarski—1357(FF*14*)

O'Brien, Kathryn
Automatic lens-design program using ray deviations as a measure of image quality, Kathryn O'Brien—1343(TC*19*)
Ogle, Kenneth N.
Stereoscopic depth with delayed presentation of images in the two eyes, Kenneth N. Ogle—521(WA*16*)
Stereoscopic depth perception and exposure delay between images to the two eyes, Kenneth N. Ogle—1296
Olsen, Allen L.
Transmittance measurements of optical materials as affected by wedge angle and refractive index in the 2- to 15-μ range, K. B. LaBaw, A. L. Olsen, and L. W. Nichols—519(TD*12*)
Transmittance of single-crystal magnesium fluoride and IRTRAN-1 in the 0.2- to 15-μ range, Allen L. Olsen and William R. McBride—1003(L)
Olson, Keith W.
Compact portable He–Ne laser functionally designed for instructional purposes, Keith W. Olson—1346(TF*11*)
Olson, O. H.
Spectral transmittance of fiber bundles, O. H. Olson, D. A. Pontarelli, and A. Brushenko—1333(WB*21*)
Onley, Judith Wheeler
Quantitative estimates of saturation, Judith Wheeler Onley, Carl L. Klingberg, Marvin J. Dainoff, and Gary B. Rollman—487
Ooba, N.
Note on the photometry of fluorescent materials, N. Ooba—879(L)
Ooue, S.
Determination of the modulation transfer function of photographic materials by the Fraunhofer diffraction methods, A. Hautot and S. Ooue—1356(FE*16*)
Oppenheim, U. P.
Statistical model applied to the region of the ν_3 fundamental of CO_2 at 1200°K, U. P. Oppenheim and Y. Ben-Aryeh—344
Oser, G. T.
Determination of the spectral response of a resistance-strip magnetic photomultiplier in the extreme ultraviolet, G. T. Oser, W. W. McCormick, and R. A. Sawyer—1344(TD*11*)
Ostantowski, J.
Reflection spectrum of cubic zinc sulfide in the interband transition region, W. C. Walker and J. Ostantowski—399(L)
Osterberg, H.
Low-loss optical guided modes, J. Kane and H. Osterberg—507(MA*17*)

Packer, D. M.
Luminance of the night airglow when observed from above the emitting layer, Irene S. Gulledge, M. J. Koomen, D. M. Packer, and R. Tousey—518(TC*13*)
Pagels, H. R.
Light output observations on low-pressure mercury-vapor discharges, F. W. Crawford and H. R. Pagels—734
Palmer, C. Harvey
Note on the use of gratings as broad-band infrared filters, C. Harvey Palmer—1005(L)
Optics Experiments and Demonstrations by C. Harvey Palmer. Book review by Sumner P. Davis—1116
Palmer, R. B.
Computer-controlled flying spot scanners, R. B. Palmer—513(MD*19*)
Pandres, D.
Remark in a paper by Kantor, A. Bierman, C. H. von Kenschitski, and D. Pandres—1008(L)
Paris, D. P.
Optical spatial-frequency-bandwidth extension in two dimensions beyond the classical limit, D. P. Paris and B. Morgenstern—1342(TC*14*)
Parkinson, W. H.
Efficiencies of gold and platinum gratings in the vacuum ultraviolet, E. M. Reeves and W. H. Parkinson—941
Parsons, A. S. L.
Determination of the refractive indices of gases in the vacuum ultraviolet. I. The Čerenkov radiation method, D. W. O. Heddle, R. E. Jennings, and A. S. L. Parsons—840
Patel, C. K. N.
Optical maser action on dissociation of diatomic and polyatomic gases, C. K. N. Patel, R. A. McFarlane, and W. L. Faust—522(WB*12*)
Patterson, D. A.
Influence of crystal surface on the optical transmission of lithium fluoride in the vacuum-ultraviolet spectrum, D. A. Patterson and W. H. Vaughan—851
Paul, Edward, Jr.
Infrared photographic observation of the flash spectrum at the eclipse of 20 July 1963, Curtis J. Humphreys, Edward Paul, Jr., and Wesley L. Eisenman—1350(FA*20*)
Pearce, Douglas
Variation of directional components of autokinetic movement with position of the eye in the orbit, Leonard Matin, Douglas Pearce, and G. Ernest MacKinnon—521(WA*17*)
Peppers, N. A.
Image synthesis, N. S. Kapany and N. A. Peppers—1343(TC*20*)
Laser photocoagulators, N. A. Peppers, N. S. Kapany, and N. Silbertrust—1347(TF*15*)
Perkins, W. D.
Design and performance of an absolute spectral radiometer, H. W. Jones, W. D. Perkins, and E. H. Siegler, Jr.—1354(FD*11*)
Peskin, J. C.
Reactions of carotenoids and secondary amines, J. C. Peskin and B. Love—1335(WD*13*)
Peterson, G. E.
Fluorescent lifetime of terbium in the presence of other rare-earth ions, G. E. Peterson and P. M. Bridenbaugh—301(L)
Effects of rare-earth-ion substitution upon the fluorescent lifetime of terbium in the compound terbium hexa-antipyrene tri-iodide, G. E. Peterson and P. M. Bridenbaugh—494(L)
Some studies of relaxation processes in Tb^{3+} using pulsed excitation, G. E. Peterson and P. M. Bridenbaugh—1129
Peterson, R. H.
Contrast reduction of circular targets due to atmospheric boil, R. H. Peterson—1008(L)
Peterson, T. J., Jr.
Penning discharge as a source in the extreme ultraviolet, R. D. Deslattes, T. J. Peterson, Jr., and D. H. Tomboulian—302(L)
Piper, John
Optical and electrical properties of bismuth deposits, Louis Harris and John Piper—1271

Plumb, Robert C.
Some observations on the use of elliptically polarized light to study metal surfaces, Frederick P. Mertens, Paul Theroux, and Robert C. Plumb—788
Polarized Light by William A. Shurcliff. Book review by R. C. Plumb—881
Plyler, Earle K.
Rotation–vibration constants of acetylene, Earle K. Plyler, Eugene D. Tidwell, and T. A. Wiggins—589
Broadening of the ν_3 lines of HCN due to argon, carbon dioxide, and hydrogen chloride, Robert J. Thibault, Arthur G. Maki, and Earle K. Plyler—1255
Pontarelli, D. A.
Hypodermic microscope using fiber optics—an instrument to observe living tissue, Charles Long, II, A. Brushenko, and D. A. Pontarelli—1333(WB*20*)
Spectral transmittance of fiber bundles, O. H. Olson, D. A. Pontarelli, and A. Brushenko—1333(WB*21*)
Porter, Terence L.
Hyperfine structure in the spectrum of mercury hydride, Terence L. Porter and Sumner P. Davis—338
Porteus, J. O.
Relation between the height distribution of a rough surface and the reflectance at normal incidence, J. O. Porteus—1394
Porto, S. P. S.
Continuous helium neon red laser as a Raman source, H. Kogelnik and S. P. S. Porto—1446(L)
Continuous photoelectric recordings of the gas-laser-excited Raman effect, S. P. S. Porto and R. C. C. Leite—1503(TD*2*)
Potter, R. F.
Reflectometer for measuring optical constants, R. F. Potter—1344(TD*13*)
Potter, R. K.
Use of spinning color disks in a study of chromatic induction, R. K. Potter—500(L)
Potter, Robert J.
Light-collecting properties of a perfect circular optical fiber, Robert J. Potter, Eric Donath, and Richard Tynan—256
Preisendorfer, Rudolph W.
Reduction of contrast by atmospheric boil, Seibert Q. Duntley, William H. Culver, Frances Richey, and Rudolph W. Preisendorfer—351
Preston, B. W.
New method for the photoelectric measurement of the optical characteristics of sheet glass, B. W. Preston—511(MC*17*)
Pruett, George R.
Electrical and optical properties of mercury-doped germanium infrared detectors, George R. Pruett—1355(FD*14*)

Quesada, A. F.
Some properties of concave reflecting-zone plates, W. S. Baird and A. F. Quesada—513(MD*20*)
Influence of surface imperfections on the sensitivity of a Fabry–Perot electro-optic type of wide-band modulator, H. J. Raterink and A. F. Quesada—1357(FF*11*)

Raabe, George A.
Adjustment of incident polarization azimuth for proportioned frustration of total reflection, George A. Raabe—525(WD*18*)
Rabinowitz, P.
Optical heterodyne detection of coherent light, S. F. Jacobs, P. Rabinowitz, J. T. LaTourette, and G. Gould—515(TA*20*)
Rank, D. H.
Quadrupole spectrum of molecular hydrogen, D. H. Rank and T. A. Wiggins—759(L)
Rao, C. R. Nagaraja
Studies of skylight polarization, George C. Holzworth and C. R. Nagaraja Rao—1341(TB*14*)
Rao, K. Narahari
Emission spectra excited in metal powder–oxygen flames, Rudolph Edse, K. Narahari Rao, W. A. Strauss, and M. E. Mickelson—436
Resolving power in the near infrared of the Fabry–Perot interferometer with gold and with silver coatings, D. A. Jackson and K. Narahari Rao—558
Rasigni, G.
On the variation with wavelength of the optical constants of thin metallic films, G. Rasigni and P. Rouard—604
Raterink, H. J.
Influence of surface imperfections on the sensitivity of a Fabry–Perot electro-optic type of wide-band modulator, H. J. Raterink and A. F. Quesada—1357(FF*11*)
Ratliff, Floyd
Spatial and temporal aspects of retinal inhibitory interaction, Floyd Ratliff, H. K. Hartline, and William H. Miller—110
Rawcliffe, R. D.
Radiance of the upper atmosphere in the middle ultraviolet and in the near infrared, R. D. Rawcliffe, G. E. Meloy, R. M. Friedman, and R. L. Williams—1334(WA*13*)
Raymo, C. T.
Optical investigation of molybdenum films, C. T. Raymo and D. W. Juenker—1332(WB*13*)
Reader, Joseph
Promethium 147 hyperfine structure under high resolution, Joseph Reader and Sumner P. Davis—431
Contribution of the $4f^6$ electron core to the optical hyperfine structure of Pm^{147}, Joseph Reader—1348(FA*11*)
Ready, J. F.
Effects due to absorption of laser radiation, J. F. Ready—514(TA*13*)
Reago, D. A.
Characteristics of a Q-switched ruby laser terminated by parallel roof prisms, E. L. Green, D. A. Reago, and M. Schoenfeld—1340(TA*19*)
Reeb, O.
Grundlagen der Photometrie by O. Reeb. Book review by Günter Wyszecki—1009
Rees, James D., Jr.
Variation in time of flight of electrons through a photomultiplier, James D. Rees, Jr., and M. Parker Givens—1347(TF*16*)
Reeves, E. M.
Efficiencies of gold and platinum gratings in the vacuum ultraviolet, E. M. Reeves and W. H. Parkinson—941
Remeika, J. P.
Optical maser action in a flux-grown ruby, D. F. Nelson and J. P. Remeika—522(WB*11*)
Richey, Frances
Reduction of contrast by atmospheric boil, Seibert Q. Duntley, William H. Culver, Frances Richey, and Rudolph W. Preisendorfer—351
Eyeburn damage calculation for an exoatmospheric nuclear event, Harris L. Mayer and Frances Richey—1333(WB*19*)
Ridgway, S. L.
Time-resolved spectroscopy of ruby laser emissions, S. L. Ridgway, G. L. Clark, and C. M. York—700
Robe, J. K.
Theory of image superposition, J. K. Robe—1356(FE*14*)

Robinson, Charles C.
Longitudinal Kerr magneto-optic effect in thin films of iron, nickel, and permalloy, C. C. Robinson—681
Faraday rotation in glasses, Charles C. Robinson—1353(FC*16*)
Robinson, G. Wilse
Luminescent phenomena in organic nonconductors, G. Wilse Robinson—1343(TE*1*)
Rodgers, William C.
Tables of Solid Angles by A. V. H. Masket and William C. Rodgers. Book review by Charles S. Williams—1009
Rollman, Gary B.
Quantitative estimates of saturation, Judith Wheeler Onley, Carl L. Klingberg, Marvin J. Dainoff, and Gary B. Rollman—487
Rome, Martin
Quadrant multiplier phototube, Martin Rome, H. G. Fleck, and D. C. Hines—509(MB*18*)
Rosberry, F. W.
Atlas of Optical Phenomena by Michel Cagnet, Maurice Françon, and Jean Claude Thrierr. Book review by F. W. Rosberry—881
Rosenau, Milton D., Jr.
Probability distribution of camera resolution, Milton D. Rosenau, Jr.—1342(TC*13*)
Rosendahl, Gottfried R.
Determination of the resolution of a charactron tube by Fourier analysis, Gottfried R. Rosendahl—1341(TB*18*)
Rosin, Seymour
Illumination system for 80-inch bubble chamber, Seymour Rosin—513(MD*18*)
Corrected Cassegrain system, Seymour Rosin—1342(TC*17*)
Ross, John S.
Isotope shift in λ5556 Å of ytterbium I, John S. Ross—299(L)
Rouard, P.
On the variation with wavelength of the optical constants of thin metallic films, G. Rasigni and P. Rouard—604
Rueppel, Walter B.
Spectral emission from high-density submicrosecond arc channels, Heinz Fischer and Walter B. Rueppel—516(TB*14*)
Ruggieri, D. J.
Measurement of diffuse frequency response of fused fiber optics, N. S. Kapany and D. J. Ruggieri—1332(WB*17*)
Rushton, W. A. H.
Increment threshold and dark adaptation, W. A. H. Rushton—104
Ryan, Derek
Coaxial laser pumps, Charles H. Church, Derek Ryan, and James P. Lesnick—514(TA*11*)

Safir, Aran
Effect of topically administered drugs on retinal directional sensitivity, Aran Safir—1007(L)
Saiedy, F.
On the atmospheric infrared continuum, K. Bignell, F. Saiedy, and P. A. Sheppard—466
Sakai, Hajime
Equivalent width of two overlapping lines, Hajime Sakai and Frederic Stauffer—507(MA*16*)
Samelson, Harold
Fluorescence of solutions of β-diketone europium chelates, Charles Brecher, Alexander Lempicki, and Harold Samelson—1346(TE*15*)
Samson, James A. R.
Absolute-intensity measurements in the extreme ultraviolet, James A. R. Samson—507(MA*15*)
Saunders, James B.
Alignment interferometer, James B. Saunders—526(WD*20*)
Saunders, S. B.
Optics of nonconservative turbid media: relationship of the scattering to the location of the absorber, R. N. Wolfe, J. J. DePalma, and S. B. Saunders—1353(FC*19*)
Savage, C. M.
Optical third harmonic generation, P. D. Maker, R. W. Terhune, and C. M. Savage—523(WB*17*)
Sawyer, Ralph A.
Determination of the spectral response of a resistance-strip magnetic photomultiplier in the extreme ultraviolet, G. T. Oser, W. W. McCormick, and R. A. Sawyer—1344(TD*11*)
Optics and the scientific manpower problem, Ralph A. Sawyer—1348(FA*1*)
Sayanagi, Kazuo
Approximation and assessment of optical transfer functions, Kazuo Sayanagi—494(L)
Schleiger, E. R.
Transmission and scattering properties of the Los Angeles, California, atmosphere in August and September 1960, E. R. Schleiger—1340(TB*13*)
Schleter, John C.
Absorption spectra of the lanthanide series of rare-earth glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—517(TB*20*)
Absorption spectra of the first transition series in phosphate glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, V. R. Weidner, and Carol Ann Smith—1353(FC*17*)
Further progress towards development of a single filter for the wavelength calibration of spectrophotometers between 0.25 and 2.6 μ, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—1353(FC*18*)
Schmidt, Bernhard M.
Faraday-effect modulation of a light beam, Bernhard M. Schmidt, John M. Williams, and Dudley Williams—1338(TA*11*)
Schneider, William E.
New standard of spectral-radiant intensity, Ralph Stair, William Schneider, and John K. Jackson—508(MB*13*)
Standardization of the spectral response of thermal detectors, William E. Schneider and Ralph Stair—1354(FD*12*)
Schober, H.
Measurement of the muscle tremble associated with hand-held field glasses, H. Schober, U. Miller, and B. Huber, —1336(WD*18*)
Schoenfeld, M.
Characteristics of a *Q*-switched ruby laser terminated by parallel roof prisms, E. L. Green, D. A. Reago, and M. Schoenfeld—1340(TA*19*)
Schultz, J. W.
Infrared modulation by free-carrier absorption, R. B. McQuistan and J. W. Schultz—524(WB*21*)
Schweitzer, Walter G., Jr.
Hyperfine structure and isotope shifts in the 2537-Å line of mercury by a new interferometric method, Walter G. Schweitzer, Jr.—1055
Wavelength passed by Hg^{198} Zeeman-split absorption filter, Walter G. Schweitzer, Jr.—1250
Wavelength of Hg^{198} Zeeman filter relative to that of the 2537-Å absorption line of an atomic beam, Walter G. Schweitzer, Jr., and Karl G. Kessler—1382
Searle, N. Z.
Ultraviolet spectral distribution and aging characteristics of xenon arcs and filters, N. Z. Searle, P. Giesecke, R. Kinmonth, and R. C. Hirt—508(MB*15*)

Sen, Tapas K.
Influence of size and brightness parameters on the differential sensitivity of the central retina to photic flicker, Tapas K. Sen and G. H. Mowbray—750
Seraphin, B. O.
Low-power light modulators, B. O. Seraphin and D. G. McCauley—523(WB*20*)
Shannon, Robert R.
Influence of secondary spectrum upon the optical transfer function, Robert R. Shannon—513(MD*15*)
Shaw, C. C.
Fiber optics. X. Evanescent boundary wave propagation, N. S. Kapany, J. J. Burke, and C. C. Shaw—929
Shaw, John H.
Study of the total absorptance near 4.5 μ by two samples of N_2O as their total pressures and N_2O concentrations were independently varied, Larry L. Abels and John H. Shaw—856
Shenker, Martin
Binocular wide-angle eyepiece systems, Martin Shenker and Joseph A. LaRussa—513(MD*17*)
Shenstone, A. G.
New vagary of a concave grating, A. G. Shenstone—1253
Sheppard, P. A.
On the atmospheric infrared continuum, K. Bignell, F. Saiedy, and P. A. Sheppard—466
Shimodaira, Tadao
Photoelectric measurement of polarized light by means of ADP polarization modulator. Part VI. Automatic measurement of carriage nutation, Hiroshi Takasaki, Tadao Shimodaira, and Yoichi Nagano—640(L)
Shipley, T.
Present status of the Luneberg theory of binocular vision, T. Shipley—510(MC*1*)
Shortess, George K.
Binocular interaction in the frog retina, George K. Shortess—1423
Shulman, Carl
Reflection and transmission of bounded waves by layered media, Leonard Bergstein and Carl Shulman—519(TD*11*)
Shurcliff, William A.
Polarized Light by William A. Shurcliff. Book review by R. C. Plumb—881
Siegel, Michael H.
Discrimination of color. III. Effect of spectral bandwidth, Michael H. Siegel—874
Siegfried, John B.
Effect of body position on brightness discrimination, Myron L. Braunstein and John B. Siegfried—1114(L)
Siegler, E. H., Jr.
Design and performance of an absolute spectral radiometer, H. W. Jones, W. D. Perkins, and E. H. Siegler, Jr.—1354(FD*11*)
Siegmund, Walter P.
Fiber-optics materials, Walter P. Siegmund—524(T)(WC*12*)
Silbertrust, N.
Laser photocoagulators, N. A. Peppers, N. S. Kapany, and N. Silbertrust—1347(TF*15*)
Silver, M.
Infrared reflectance of aluminum evaporated in ultra-high vacuum, H. E. Bennett, M. Silver, and E. J. Ashley—1089
Simonds, J. L.
Analysis of fine-detail reproduction in photographic systems, J. L. Simonds, J. R. Kelch, and G. C. Higgins—521(WA*19*)
Application of characteristic vector analysis to photographic and optical response data, J. L. Simonds—968
Sinclair, Douglas C.
Choice of mirror curvatures for laser cavities, Douglas C. Sinclair—1348(TF*18*)
Measurements of intensity and phase distributions in curved-mirror laser modes, Douglas C. Sinclair—1348(TF*19*)
Sink, R.
Attenuation of photographic contrast by the atmosphere, M. Mazurowski and R. Sink—1338(WC*14*)
Skidmore, M. R.
Preliminary spectroscopic results on a very long, high-current, magnetically confined, vacuum carbon arc, J. R. McNally, Jr., M. R. Skidmore, J. E. Francis, P. M. Jenkins, and D. A. Griffin—495(L)
Skinner, Thomas J.
Imaging with coherent light, T. J. Skinner—514(TA*17*)
Surface texture effects in coherent imaging, Thomas J. Skinner—1350(FB*13*)
Slama, L.
Scattering of ruby-laser light by gases, T. V. George, L. Slama, M. Yokoyama, and L. Goldstein—1347(TF*13*)
Slater, P. N.
Magnetostrictively scanned Fabry–Perot interferometer, P. N. Slater and H. T. Betz—1358(FF*19*)
Scanning Fabry–Perot interferometer for day-airglow measurements, H. T. Betz, P. N. Slater, and A. Weigandt—1358(FF*20*)
Sliker, T. R.
Rate of volume photolysis in copper-doped silver chloride, T. R. Sliker—454
Smiley, Vern N.
Analysis of infrared interference filters by means of an analog computer, Vern N. Smiley and Frank E. Stuart—1078
Smith, Carol Ann
Absorption spectra of the first transition series in phosphate glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, V. R. Weidner, and Carol Ann Smith—1353(FC*17*)
Smith, D. S.
Vacuum wavelengths of Kr^{86}, Hg^{198}, and Cd^{114}, K. M. Baird, D. S. Smith, and K. H. Hart—717
Snitzer, Elias
Neodymium-glass-fiber laser, E. Snitzer, R. Crevier, and F. Hoffman—515(TA*21*)
Fiber laser as a light amplifier, Charles J. Koester and Elias Snitzer—515(TA*22*)
Frequency control of a neodymium glass laser, E. Snitzer and F. Hoffman—1347(TF*12*)
Som, S. C.
Diffraction images of circular phase objects in partially coherent light, M. De and S. C. Som—779
Sparrow, E. M.
Radiant emission characteristics of diffuse conical cavities, E. M. Sparrow and V. K. Jonsson—816
Spector, Nissan
Theoretical interpretation of the level structure of Ce^{3+}, Nissan Spector—1349(FA*14*)
Speelman, Roseanne G.
Effects of chromatic adaptation on normal and dichromatic red–green brightness matches, Roseanne G. Speelman and John Krauskopf—1103
Spencer, D. E.
Field Theory Handbook, Including Coordinate Systems, Differential Equations and Their Solutions by P. Moon and D. E. Spencer. Book review by Dr. M. Herzberger—767
Sperling, George
Essential nonlinearity of visual masking by flickering light, George Sperling—520(WA*13*)

Stair, Ralph
New standard of spectral-radiant intensity, Ralph Stair, William Schneider, and John K. Jackson—508(MB*13*)
Infrared spectral emissivity of a lanthanum-lutetium-doped glass at 400°C, W. B. Fussell and Ralph Stair—1352 (FC*15*)
Standardization of the spectral response of thermal detectors, William E. Schneider and Ralph Stair—1354 (FD*12*)

Stanley, N. R.
Modulation transfer function associated with image transmission through turbulent media, R. E. Hufnagel and N. R. Stanley—1338(WC*15*)

Stanley, R. W.
Atomic-beam source for the spectra of rare gases, R. W. Stanley—1349(FA*16*)

Stauffer, Frederic
Equivalent width of two overlapping lines, Hajime Sakai and Frederic Stauffer—507(MA*16*)

Staunton, John J. J.
Spectrophotometer using a new grating mount for broadened spectral distribution, John J. J. Staunton—1344 (TD*12*)

Stavroudis, Orestes N.
Group theoretic aspects of a transformation matrix occurring in geometric optics, Orestes N. Stavroudis and Loyd E. Sutton—512(MD*14*)

Stehle, P.
High-intensity limit of Thomson scattering, P. Stehle—1003(L)

Steiner, B. W.
Methods of Experimental Physics. Volume 3. Molecular Physics by Dudley Williams. Book review by B. W. Steiner—1116

Steinhaus, David W.
Automatic comparator for measurement of line spectra, David W. Steinhaus and Rolf Engleman, Jr.—1349 (FA*15*)

Steinman, Robert M.
Study of absolute visual detection by the rating-scale method, Jacob Nachmias and Robert M. Steinman—1206

Stepp, Edward
Decay of intensity of certain Hg lines in an Hg–Ar discharge, Richard Anderson and Edward Stepp—1139

Stevens, J. C.
Brightness function: effects of adaptation, J. C. Stevens and S. S. Stevens—375

Stevens, S. S.
Brightness function: effects of adaptation, J. C. Stevens and S. S. Stevens—375

Stewart, Harold
Useful digital and analog approximations of the optical properties of overcasts, Robert Frank, Robert Hopfield, and Harold Stewart—517(TB*22*)

Stierwalt, D. L.
Infrared spectral-absorptance measurements of several optical materials, D. L. Stierwalt—1352(FC*14*)

Strauss, W. A.
Emission spectra excited in metal powder–oxygen flames, Rudolph Edse, K. Narahari Rao, W. A. Strauss, and M. E. Mickelson—436

Streete, John L.
Launch ciné-spectrograph program, John L. Streete and Stanley S. Ballard—1345(TD*19*)

Streifer, William
On the theory of diffraction by black obstacles, William Streifer—525(WD*15*)

Stroke, George W.
Tandem use of gratings and echelles to increase resolution, luminosity, and compactness of spectrometers and spectrographs, G. W. Stroke and H. H. Stroke—333
Emergence of modern optics as a branch of electrical engineering, George W. Stroke—1346(TE*17*)

Stroke, H. H.
Tandem use of gratings and echelles to increase resolution, luminosity, and compactness of spectrometers and spectrographs, G. W. Stroke and H. H. Stroke—333
Hyperfine structure, isotope, and isomer shifts in Hg^{199m}, Hg^{194}, Hg^{180m}, and Hg^{198}—Comments on the paper of Kleiman and Davis, W. J. Tomlinson, III, and H. H. Stroke—828
$^2S_{\frac{1}{2}}$ hyperfine-structure separations and isotope shifts of radioactive Cd^{107}, Cd^{109}, and of stable Cd isotopes, R. J. Hull and H. H. Stroke—1147

Strong, John
Investigations of Infra-Red Spectra by William W. Coblentz. Book review by John Strong—881

Stuart, Frank E.
Analysis of infrared interference filters by means of an analog computer, Vern N. Smiley and Frank E. Stuart —1078

Studer, Frank J.
Determination of chromaticity coordinates of fluorescent lamps by spectral energy distribution, Frank J. Studer —508(MB*11*)
Ultraviolet and Infrared Engineering by W. Summer. Book review by Frank J. Studer—645
Spectral-energy distribution of tungsten-filament quartz-iodine lamps, Frank J. Studer—1357(FE*18*)

Sturr, Joseph F.
Evoked potential analysis of visual excitability, Joseph F. Sturr and William S. Battersby—1337(WD*20*)

Sugar, Jack
Analysis of the third spectrum of praseodymium, Jack Sugar—831
New description and analysis of Ce III, Jack Sugar—1348(FA*12*)

Sugiyama, Y.
Paired comparisons of color differences, Y. Sugiyama and Hilton Wright—1214

Sullivan, Seraphin A.
Experimental study of the absorption in distilled water, artificial sea water, and heavy water in the visible region of the spectrum, Seraphin A. Sullivan—962

Summer, W.
Ultraviolet and Infrared Engineering by W. Summer. Book review by Frank J. Studer—645

Sutton, Loyd E.
Group theoretic aspects of a transformation matrix ocurring in geometric optics, Orestes N. Stavroudis and Loyd E. Sutton—512(MD*14*)

Takasaki, Hiroshi
Photoelectric measurement of polarized light by means of ADP polarization modulator. Part VI. Automatic measurement of carriage nutation, Hiroshi Takasaki, Tadao Shimodaira, and Yoichi Nagano—640(L)

Tammaru, Enn
Collection efficiency of receivers placed close to sources, D. A. Berkowitz and Enn Tammaru—1292

Tawde, N. R.
On the relative transition probabilities of BeO($B^1\Sigma^+ - X^1\Sigma^+$) system, N. R. Tawde and N. Sreedhara Murthy —298(L)

Taylor, Maurice M.
Visual discrimination and orientation, Maurice M. Taylor —763(L)
Terhune, R. W.
Optical third harmonic generation, P. D. Maker, R. W. Terhune, and C. M. Savage—523(WB*17*)
Thelen, Alfred
Multilayer filters with wide transmission bands, Alfred Thelen—519(TD*15*)/1266
Theroux, Paul
Some observations on the use of elliptically polarized light to study metal surfaces, Frederick P. Mertens, Paul Theroux, and Robert C. Plumb—788
Thibault, Robert J.
Broadening of the ν_3 lines of HCN due to argon, carbon dioxide, and hydrogen chloride, Robert J. Thibault, Arthur G. Maki, and Earle K. Plyler—1255
Thiry, Henri
Wiener spectrum of granularity and noise spectrum as determined by diffraction, Henri Thiry—1341(TB*17*)
Thomas, James P.
Relation of brightness contrast to inducing stimulus output, James P. Thomas—1033
Thompson, Brian J.
Fraunhofer diffraction patterns of opaque objects with coherent background, Brian J. Thompson—1350(FB*11*)
Thomson, Elinor
Solvent effects on carbonyl bands in infrared spectra, Robert P. Bauman and Elinor Thomson—202(L)
Thorington, Luke
Relative spectral irradiance of xenon compact arcs, chromaticities derived therefrom, and methods, Luke Thorington—508(MB*14*)
Thrierr, Jean Claude
Atlas of Optical Phenomena by Michel Cagnet, Maurice Françon, and Jean Claude Thrierr. Book review by F. W. Rosberry—881
Tidwell, Eugene D.
Rotation–vibration constants of acetylene, Earle K. Plyler, Eugene D. Tidwell, and T. A. Wiggins—589
Tilford, S. G.
Rydberg series in N v, S. G. Tilford—1051
Tomboulian, D. H.
Penning discharge as a source in the extreme ultraviolet, R. D. Deslattes, T. J. Peterson, Jr., and D. H. Tomboulian—302(L)
Tomita, Tsuneo
Electrical activity in the vertebrate retina, Tsuneo Tomita —49
Tomkins, Frank S.
Preliminary-term analysis of the Np I spectrum, Mark Fred and Frank S. Tomkins—506(MA*13*)
Evaluation of the performance of the Hypeac scanning-interference spectrometer, Frank S. Tomkins—1357 (FF*12*)
Tomlinson, W. J., III
Hyperfine structure, isotope, and isomer shifts in Hg^{199m}, Hg^{194}, Hg^{195m}, and Hg^{196}—Comments on the paper of Kleiman and Davis, W. J. Tomlinson, III, and H. H. Stroke—828
Tomljanovich, Nicholas
Emissivity of a shallow cylinder with specularly reflecting walls, Nicholas Tomljanovich and W. B. Fussell—1352(FC*13*)
Tourin, Richard H.
Determination of hot-gas-temperature profiles from infrared emission and absorption spectra, Richard H. Tourin —517(TB*19*)
Tousey, Richard
Luminance of the night airglow when observed from above the emitting layer, Irene S. Gulledge, M. J. Koomen, D. M. Packer, and R. Tousey—518(TC*13*)
Optical materials for the far and extreme ultraviolet, Richard Tousey—524(T)(WC*15*)
Trees, Richard E.
Richard E. Trees, Necrology—312
Treuenfels, Ernst W.
Emissivity of isothermal cavities, Ernst W. Treuenfels—1162
Tricoles, G.
Radiation patterns of a microwave antenna enclosed by a hollow dielectric wedge, G. Tricoles—545
Radiation patterns and boresight error of a microwave antenna enclosed in an axially symmetric dielectric shell, G. Tricoles—1351(FB*17*)
Tsuruta, Tadao
Measurement of transfer functions of photographic objectives by means of a polarizing shearing interferometer, Tadao Tsuruta—1156
Turkeltaub, N.
Atlas of Analysis Lines by Halina Jaffe with technical assistance from N. Turkeltaub. Book review by Marvin Margoshes—*767*
Turner, A. F.
Thin films and protective coatings, A. F. Turner—524(T)(WC*16*)
Turner, E. H.
Electro-optic effect in GaAs, E. H. Turner and I. P. Kaminow—523(WB*16*)
Tynan, Richard
Light-collecting properties of a perfect circular optical fiber, Robert J. Potter, Eric Donath, and Richard Tynan—*256*

Upatnieks, Juris
Wavefront reconstruction with continuous-tone transparencies, Emmett N. Leith and Juris Upatnieks—*522*(WA*21*)
Wavefront reconstruction with continuous-tone objects, Emmett N. Leith and Juris Upatnieks—1377

Vander Lugt, A.
Signal detection by complex spatial filtering, A. Vander Lugt—1341(TB*16*)
Vanderschmidt, G. F.
Optical surface comparator, E. S. Candidus and G. F. Vanderschmidt—509(MB*19*)
Vaughan, W. H.
Influence of crystal surface on the optical transmission of lithium fluoride in the vacuum-ultraviolet spectrum, D. A. Patterson and W. H. Vaughan—851
Verghese, C. A.
Constancy of the visibility of a moving object viewed from different distances with the eyes fixed, Balraj Bhatia and C. A. Verghese—283
Verriest, G.
Further studies on acquired deficiency of color discrimination, G. Verriest—185
Vogl, Thomas P.
Ultrahigh-speed achromats for the 8- to 12-μ region designed with D. S. Grey's lens optimization program, Thomas P. Vogl—1343(TC*18*)
von Kenschitski, C. H.
Remark in a paper by Kantor, A. Bierman, C. H. von Kenschitski, and D. Pandres—1008(L)

von Pahlen-Federoff, Gerhard
Wave-optical angle-amplification method, Gerhard von Pahlen-Federoff—1351(FB*18*)

Vos, J. J.
Fluctuation theory of luminance and chromaticity discrimination, M. A. Bouman, J. J. Vos, and P. L. Walraven—121
Contribution of the cornea to entoptic scatter, J. J. Vos and J. Boogaard—869
Fundus component of entoptic straylight studied with the Stiles–Crawford effect, J. J. Vos—1337(WD*19*)
Contribution of the fundus oculi to entoptic scatter, J. J. Vos—1449(L)

Wagner, Henry G.
Functional basis for "on"-center and "off"-center receptive fields in the retina, Henry G. Wagner, Edward F. MacNichol, Jr., and Myron L. Wolbarsht—66

Wald, George
Problem of visual excitation, George Wald, Paul K. Brown, and Ian R. Gibbons—20

Walker, W. C.
Reflection spectrum of cubic zinc sulfide in the interband transition region, W. C. Walker and J. Ostantowski—399(L)

Walraven, P. L.
Fluctuation theory of luminance and chromaticity discrimination, M. A. Bouman, J. J. Vos, and P. L. Walraven—121
Foveal sensitivity of the human eye in the near infrared, P. L. Walraven and H. J. Leebeek—765(L)

Walsh, D. J.
Temperature dependence of the refractive index of optical maser crystals, T. W. Houston, L. F. Johnson, P. Kisliuk, and D. J. Walsh—1286

Walsh, P. J.
Stimulated emission of magnetic dipole radiation in electric discharges, P. J. Walsh and G. E. Courville—1043

Warshawsky, Jay
High-resolution optometer for the continuous measurement of accommodation errors, Jay Warshawsky and Richard W. Jones—520(WA*12*)

Watkins, Melvin C.
Laser modulation with hexamethylenetetramine, Richard W. McQuaid and Melvin C. Watkins—1339(TA*17*)

Weaver, C.
Determination of the absolute phase change on reflection at chromium films, G. Henderson and C. Weaver—1331(WB*11*)

Weber, Gregorio
Total quantum flux of isotropic sources, J. Woodland Hastings and Gregorio Weber—1410

Weidner, V. R.
Absorption spectra of the lanthanide series of rare-earth glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—517(TB*20*)
Absorption spectra of the first transition series in phosphate glasses, H. J. Keegan, G. W. Cleek, J. C. Schleter, V. R. Weidner, and Carol Ann Smith—1353(FC*17*)
Further progress towards development of a single filter for the wavelength calibration of spectrophotometers between 0.25 and 2.6 μ, H. J. Keegan, G. W. Cleek, J. C. Schleter, and V. R. Weidner—1353(FC*18*)

Weigandt, A.
Scanning Fabry–Perot interferometer for day-airglow measurements, H. T. Betz, P. N. Slater, and A. Weigandt—1358(FF*20*)

Weinberg, F. J.
Optics of Flames by F. J. Weinberg. Book review by F. D. Bennett—1224

Weiner, D.
Stimulated Raman-scattering thresholds from absolute Raman-scattering cross sections, F. J. McClung and D. Weiner—523(WB*18*)

Welford, W. T.
Stigmatic Ebert-type plane grating mounting, W. T. Welford—766(L)

Wendland, Paul H.
Nonuniformly excited photoconductivity in sensitive photoconductors, Paul H. Wendland—1037

Westheimer, Gerald
Optical and motor factors in the formation of the retinal image, Gerald Westheimer—86
Light distribution in ocular images, Gerald Westheimer—521(WA*18*)

Weyl, W. A.
Liquid structures and glass formation, W. A. Weyl—407

Weymouth, Frank W.
Frank W. Weymouth, Necrology—776
Visual resolution and contour interaction, Merton C. Flom, Frank W. Weymouth, and Daniel Kahneman—1026

Wheeler, Lawrence
Color-matching responses to red light of varying luminance and purity; an investigation of induced color, Lawrence Wheeler—510(MC*12*)
Color-matching responses to red light of varying luminance and purity in complex and simple images, Lawrence Wheeler—978

White, D. R.
Comments on an experiment concerning Einstein's light velocity postulate, D. R. White and R. A. Alpher—760(L)

White, G. R.
Interferometer laser mode selector, S. A. Collins and G. R. White—514(TA*14*)

Whitney, R. E.
Far-infrared interferometer for the measurement of high electron densities, Sanborn C. Brown, G. Bekefi, and R. E. Whitney—448

Wiggins, T. A.
Rotation–vibration constants of acetylene, Earle K. Plyler, Eugene D. Tidwell, and T. A. Wiggins—589
Quadrupole spectrum of molecular hydrogen, D. H. Rank and T. A. Wiggins—759(L)

Wilczynski, J. S.
Derivation of secondary (fifth-order) wave aberrations for a system of centered spherical surfaces, J. S. Wilczynski—1342(TC*15*)
Diffraction of a plane wave by a sequence of identical coaxial apertures, D. J. Jhirad and J. S. Wilczynski—1347(TF*17*)
Interferometric method of determining the separation between a moving and a static surface, J. S. Harper, P. B. Levenglick, and J. S. Wilczynski—1358(FF*15*)

Wilkins, J. Ernest, Jr.
Luneberg apodization problems, J. Ernest Wilkins, Jr.—420

Wilkinson, P. G.
Proposed standard wavelengths in the vacuum ultraviolet Spectra of Ge, Ne, C, Hg, and N, P. G. Wilkinson and K. L. Andrew—710

Willey, R. R., Jr.
Coaxial, dual-field optics for a space sextant, H. E. Brunelle, Jr., and R. R. Willey, Jr.—1344(TD*18*)

Williams, Charles S.
Tables of Solid Angles by A. V. H. Masket and William C. Rodgers. Book review by Charles S. Williams—1009

Williams, Dudley
Infrared resonance fluorescence in gases, Dudley Williams and David J. McCaa—516(TB*13*)
Methods of Experimental Physics. Volume 3. Molecular Physics by Dudley Williams. Book review by B. W. Steiner—1116
Faraday-effect modulation of a light beam, Bernhard M. Schmidt, John M. Williams, and Dudley Williams—1338(TA*11*)
Vibrational fluorescence of carbon monoxide, David J. McCaa and Dudley Williams—1345(TE*14*)
Williams, John M.
Faraday-effect modulation of a light beam, Bernhard M. Schmidt, John M. Williams, and Dudley Williams—1338(TA*11*)
Williams, R. L.
Radiance of the upper atmosphere in the middle ultraviolet and in the near infrared, R. D. Rawcliffe, G. E. Meloy, R. M. Friedman, and R. L. Williams—1334(WA*13*)
Wilmanns, I.
Study of the optical and electrical properties of thin films of palladium, F. Abeles, P. Lostis, and I. Wilmanns—1332(WB*14*)
Wilmshurst, J. K.
Evaluation of the one-angle reflection technique for the determination of optical constants, H. J. Bowlden and J. K. Wilmshurst—1073
Wolbarsht, Myron L.
Functional basis for "on"-center and "off"-center receptive fields in the retina, Henry G. Wagner, Edward F. MacNichol, Jr. and Myron L. Wolbarsht—66
Wolf, E.
Generation of spatial coherence in light propagated through periodic structures, E. Wolf—524(WD*11*)
Detection of laser radiation, L. Mandel and E. Wolf—1315(L)
Structure of the electromagnetic field in the neighborhood of the focus of an aplanatic optical system, Albéric Boivin and E. Wolf—1342(TC*11*)
Wolf, Ernst
Effects of uniocular and binocular excitation of the peripheral retina with test fields of various shapes on binocular summation, Ernst Wolf and Michael J. Zigler—1199
Sensitivity of the retinal area in one eye corresponding to the blind spot in the other eye, Ernst Wolf and Jean S. Gardiner—1437
Wolfe, R. N.
Optics of nonconservative turbid media: relationship of the scattering to the location of the absorber, R. N. Wolfe, J. J. DePalma, and S. B. Saunders—1353(FC*19*)
Wolfe, William
Infrared-optical materials, William Wolfe—524(T)(WC*13*)
Wolken, Jerome J.
Structure and molecular organization of retinal photoreceptors, Jerome J. Wolken—1
Woodcock, Richard F.
Lifetimes of Nd^{3+}-doped silicate laser glasses, Richard F. Woodcock—523(WB*14*)
Woodson, Robert A.
Optical communication-system analysis, Robert A. Woodson—1332(WB*18*)
Worden, Earl F.
Self-luminescence spectrum of $Bk^{3+}(5f^8)$, Ralph G. Gutmacher, E. Kenneth Hulet, Earl F. Worden, and John G. Conway—506(MA*12*)
Wright, Hilton
Paired comparisons of color differences, Y. Sugiyama and Hilton Wright—1214
Wyszecki, Günter
Color of daylight from north sky, Y. Nayatani and G. Wyszecki—511(MC*18*)/626
Color of fluorescent paints, Y. Nayatani and G. Wyszecki—744
Grundlagen der Photometrie by O. Reeb. Book review by Günter Wyszecki—1009
Proposal for a new color-difference formula, Günter Wyszecki—1318(L)

Yokoyama, M.
Scattering of ruby-laser light by gases, T. V. George, L. Slama, M. Yokoyama, and L. Goldstein—1347(TF*13*)
York, C. M.
Time-resolved spectroscopy of ruby laser emissions, S. L. Ridgway, G. L. Clark, and C. M. York—700
Young, C. G.
Single-mode glass laser, C. G. Young and J. W. Kantorski—1339(TA*16*)

Zachor, A. S.
Atmospheric radiation model for the 5- to 50-μ region; comparison to interferometric observations, A. S. Zachor—1337(WC*12*)
Zigler, Michael J.
Effects of uniocular and binocular excitation of the peripheral retina with test fields of various shapes on binocular summation, Ernst Wolf and Michael J. Zigler—1199
Zirkind, Ralph
Transmission of optical radiation through the earth's atmosphere, Ralph Zirkind—1334(WC*1*)
Zissis, G. J.
Spectral responsivity of radiometers, G. J. Zissis and F. E. Nicodemus—509(MB*17*)

Subject Index to Volume 53

Key to index use.

1. Subjects, not titles have been indexed.

2. Contents of papers (and abstracts of papers presented at meetings) have been indexed by principal subject rather than by a word breakdown of the title. The abstracts of papers presented at meetings are keyed by the same notation that identified them by day and session of presentation.

3. Subjects have been indexed in subdivisions according to key words with prepositions such as "on," "in," "of," "with," included where essential for euphonious interpretation but not affecting the alphabetical arrangement of the principal subject. In many cases where obvious, these prepositions have been omitted.

Aberrations
- chromatic
  - influence on optical transfer function, 513(MD*15*)
  - reduction of eye-burn hazard from —, 1333
  - and spherical — of the eye, 86
  - in superachromats, 661
- of concave grating, theory of —, 525(WD*14*)
- from decentrations and tilts, 1342(TC*16*)
- spherical
  - application of Luneberg diffraction theory, 324
  - influence on images of square objects in incoherent light, 1371
  - measured by polarizing shearing interferometer, 1156
  - method for determining fifth-order —, 1342(TC*15*)
  - method of visualizing high-order —, 512(MD*12*)
- and spot diagrams, 661
- theories for semi-automatic lens design, 672, 677
- of wavefront determination by radial shearing interferometer, 395

Absorption
- by atoms producing optical pumping, 962
- coefficients of turbid media, 1353(FC*19*)
- colloidal suspension, theory of, 239
- of HCl, temperature dependence of —, 945
- influence of — line on Rayleigh scattering, 1223
- infrared
  - of bismuth deposits, 1271
  - continuum in atmosphere, 466
  - of N_2O, 856
  - of optical materials, 1352(FC*14*)
- laser radiation, effects of, 514(TA*13*)
- by metallic films, wavelength variation, 604
- by molybdenum films, 1332(WB*13*)
- of nonparallel radiation, 234
- by one-angle reflection technique, 1073
- by optical fibers and their coatings, 929
- by oxygen and ozone, influence on atmospheric scattering, 1333(WA*12*)
- by palladium films, 1332(WB*14*)
- by platinum films in ultraviolet, 1084
- and refractive index, geometric method of evaluating — from reflectance ratios, 247
- by sea water, 214
- spectra
  - of acetylene, rotation vibration constants, 589
  - of Lanthanide series of rare-earth glasses, 517(TB*20*)
  - of phosphate glasses, 1353(FC*17*)
- by thermoluminescent minerals, 1276
- ultraviolet, by alkali halides, 517(TB*21*)
- by water, distilled, sea, and heavy, 962

Aluminum
- ground glass coated with —, reflectance of, 1389
- oxide, emission spectra from metal powder–oxygen flames, 436
- reflectance of
  - films in infrared, 1089
  - before and during oxidation, in ultraviolet, 620
  - in ultraviolet, 1096

Apodization
- Luneberg problems, 420
- for resolution increase with incoherent illumination, 274

Argon
- broadening of HCN lines from, 1255
- influence of — on afterglow of Hg spectrum, 1139
- scattering by, 1347(TF*13*)
- spectrum
  - analysis of, 1349(FA*17*)
  - for spectroradiometric standard, 507(MA*15*)
- ultraviolet refractive index of, 840, 847

Astronomy
- antenna design in radio, 1342(TC*11*)
- coaxial, dual-field optics for a space sextant, 1344(TD*18*)
- quadrant multiplier phototube for position indication, 509(MB*18*)
- solar chromosphere, technique for observation of, 518 (TC*11*)
- stellar correlation interferometry, laser amplifiers used in, 1347(TF*14*)
- stellar simulation by stabilized xenon arc lamp, 1344 (TD*17*)

Atmospheric optics
- atmospheric absorption, reduction of eye-burn hazard from, 1333(WB*19*)
- color of north-sky light, 511(MC*18*), 626
- contrast attenuation in photography, 1338(WC*14*)
- contrast reduction by atmospheric boil, 351
  - tables of, 1008
- day-airglow line at 6300 Å measured by magnetostrictively-scanned interferometer, 1358(FF*20*)
- fluorescence of oxygen and water vapor, 397
- infrared absorption continuum, 466
- infrared reflectance of cirrus (ice) clouds, 860
- luminance of night airglow from above emitting layer, 518(TC*13*)
- model
  - for attenuation in visible and infrared windows, 1337(WC*11*), (WC*12*)
  - for evaluating infrared radiances of cloud background, 1341(TB*15*)
- modulation transfer function for atmospheric turbulence, 1338(WC*15*)
- polarization of skylight, 1341(TB*14*)
- radiance of upper atmosphere, 1334(WA*13*)
- reflectance and albedo of earth from high altitudes, 1333(WA*11*)
- scattering in atmosphere
  - diffuse-field theory of, 1333(WA*12*)
  - lower, 358
  - upper, 1340(TB*11*)

spectral energy distribution of daylight, 1340(TB*12*)
stratospheric composition from infrared absorption spectra, 1335(WC*3*)
transmittance of atmosphere
and earth's albedo calculated from energy balance, 1334(WA*16*)
in optical communication-system analysis, 1332(WB*181*)
along slant path, 1338(WC*13*)
transmittance and scattering
of atmosphere, 1334(WC*1*)
of Los Angeles atmosphere, 1340(TB*13*)
water-vapor transmittance near 2.7 μ for various water-vapor concentrations and air pressures and temperatures, 1334(WC*2*)

Axicon
annuli and coherent light, 525(WD*12*)

Berkelium
self-luminescence spectrum of $Bk^{3+}(5f^8)$ in $LaCl_3$, 506(MA*12*)

Beryllium
transition probabilities of BeO($B^1\Sigma^+$–$X^1\Sigma^+$) system, 298

Bismuth
optical and electrical properties of — deposits, 1271

Blackbody
spatial coherence of — radiation, 509(MB*16*)

Book Reviews
Astronomy
Basic Physics of the Solar System, by V. M. Blanco and S. W. McCuskey (reviewed by Wasley S. Krogdahl), *767*
Color
Color of Foods, by Gordon Mackinney and Angela C. Little (reviewed by Dorothy Nickerson), 645
Electronics
Advances in Electronics and Electron Physics—Vol. 16: Photo-Electronic Image Devices, Symposium Proceedings (reviewed by Pierre Mertz), 1224
Glass
Modern Aspects of the Vitreous State, edited by J. D. Mackenzie (reviewed by Norbert J. Kreidl), 1009
Historical
Count Rumford, Physicist Extraordinary, by Sanford C. Brown (reviewed by W. E. K. Middleton), 768
Mathematics
Field Theory Handbook, Including Coordinate Systems, Differential Equations and their Solutions, by P. Moon and D. E. Spencer (reviewed by M. Herzberger), *767*
Tables of Solid Angles, by A. V. H. Masket and William C. Rodgers (reviewed by Charles S. Williams), 1009
Microscopy
The World Through the Electron Microscope, by Japan Electron Optics Laboratory (reviewed by H. F. McMurdie), 1117
Molecular Physics
Methods of Experimental Physics, Vol. 3: Molecular Physics, by Dudley Williams (reviewed by B. W. Steiner), 1116
New journals
Physica Status Solidi, monthly (reviewed by Pierre Mertz), 645
Optical engineering
Ultraviolet and Infrared Engineering, by W. Summer (reviewed by Frank J. Studer), 645
Optics
Atlas of Optical Phenomena, by Michel Cagnet, Maurice Françon, and Jean Claude Thrierr (reviewed by F. W. Rosberry), 881
Optics Experiments and Demonstrations, by C. Harvey Palmer (reviewed by Sumner P. Davis), 1116
Optics of Flames, by F. J. Weinberg (reviewed by F. D. Bennett), 1224
Polarized Light, by William A. Shurcliff (reviewed by R. C. Plumb), 881
Studies in Optics, by A. A. Michelson (reviewed by C. C. Kiess), 882
A Textbook on Light at an Introductory Level, by L. Mackinnon (reviewed by E. Scott Barr), *767*
Photography
Polaroid Land Photography Manual, by Ansel Adams (reviewed by C. S. McCamy), 1117
Photometry
Grundlagen der Photometrie, by O. Reeb (reviewed by Günter Wyszecki), 1009
Spectroscopy
Absorption Spectroscopy, by Robert P. Bauman (reviewed by M. G. Mellon), 501
Atlas of Analysis Lines, by Halina Jaffe (reviewed by Marvin Margoshes), *767*
Atomic-Absorption Spectrophotometry, by W. T. Elwell and J. A. F. Gidley (reviewed by John R. Gould), 501
Investigations of Infra-red Spectra, by William W. Coblentz (reviewed by John Strong), 881
Orbitals in Atoms and Molecules, by Chr. Klixbüll Jørgensen (reviewed by Harry C. Allen), 1224

Cadmium
spectra of, isotopes and hyperfine structure, 1147
sulfide
infrared absorptance of, 1352(FC*14*)
refractive index of, 496
ultraviolet wavelengths of, 717

Calcium
fluoride, infrared absorptance of, 1352(FC*14*)

Carbon
arc for high-temperature plasma, 495
dioxide
broadening of HCN lines from, 1255
infrared emissivity of, 951
statistical model for ν_3 fundamental, 344
weak telluric band, 203
monoxide, vibrational fluorescence of, 1345(TE*14*)
Swan-band spectrum of C_2 molecule, 1345(TE*12*)
ultraviolet standard wavelengths from, 710

Cerium
dioxide films, refractive index of, 880
fluoride films, refractive index of, 880, 1317
low energy levels in, 1047
spectrum, analysis of, 1348(FA*12*), 1349(FA*14*)

Chromium
absorption spectrum of, 1353(FC*17*)
phase change on reflection from — films, 1331(WB*11*)

Cobalt
absorption spectrum of, 1353(FC*17*)
optical constants of — films, 604

Coherence
applications of — in spectroscopy, 1343(TD*1*)
Brown–Twiss experiments, 514(TA*16*)
complex spatial filtering to detect — signal, 1341(TB*16*)
design consideration of — in optical computers, 523(WB*19*)
diffraction images with partial —, 779
influence of
on detection of laser radiation, 1315
on imaging, 1351(FB*15*)
measurement of, degree of, 1350(FB*14*)

Coherence (Continued)
spatial
of blackbody radiation, 509(MB*16*)
generated by periodic structures, 524(WD*11*)
surface texture in — imaging, 1350(FB*13*)
theory of — matrix, 317
Color
adaptation
influence on brightness matching, 1103
v. Kries transformations, 510(MC*13*)
difference evaluation by paired comparisons, 1214
difference perception and nonlinear relation to chromaticity differences, 754
dimensionality of, 1356(FE*11*)
discrimination of, in spectrum, effect of bandwidth, 874
and efficiency of luminescent sources, 1185
induction
from patterns of red light, 510(MC*12*)
use of spinning disks, 500
of luminescent light sources, 511(MC*15*)
of north-sky light, 511(MC*18*), 626
of the ocean, 214
opponent mechanisms in theory of —, studied by increment-threshold experiments, 1305
perception
of red light–tungsten light mixtures, 978
with stabilized retinal image, 741
photography of solar eclipse, 1349(FA*19*)
of rear-projection screen due to granularity, 522(WA*20*)
rendition of fluorescent paints, 744
saturation, quantitative estimate of, 487
theory of — perception, 520(WA*11*)
Colorimetry
Adams chromatic-value coordinates tabulated for tristimulus values, 510(MC*11*), 1317
chromaticity differences found from reflectance ratios by graphs, 1107
color-difference expressions, evaluation of, 293
correlated color temperature, 999
of foods, 512(MC*20*)
by instruments for industrial color control, 1354(FE*1*)
large-field color-matching functions, experimental check of, 511(MC*14*)
Munsell-value equation, inversion of, 499
new formula for color-difference size, 1318
reflectometers, test for uniformity of, 390
by spectroradiometry
of fluorescent lamps, 508(MB*11*, MB*12*)
of Xenon arcs, 508(MB*14*)
tristimulus — for large-sample viewing, 1356(FE*12*)
Compensators
Senarmont inexact, conditions for application of, 801
Computers
analog, to analyze infrared interference filters, 1078
coherence-design considerations in optical, 523(WB*19*)
for collection efficiency of receivers close to the source, 1292
for color and efficiency of phosphor blends, 1185
for control of flying-spot scanners, 513(MD*19*)
for correlated color temperature, 999
for differential correction of optical systems, 512(MD*13*)
for image construction for concave gratings by ray tracing, 1180
for influence of secondary spectrum on optical transfer function, 513(MD*15*)
for line strengths and spectral emissivities of nitric oxide, 515(TB*11*)
for measurement of line spectra, 1349(FA*15*)
for near-focus diffraction integrals, 1351(FB*20*)
for ray tracing of gratings, 518(TC*12*)
for reflectance and transmittance of scattering layers by random-walk theory, 517(TB*22*)
for semi-automatic lens design, 672, 677
for testing one-angle reflection technique for optical constants, 1073
wavefront curvatures determined by, 512(MD*11*)
for wavefunctions and energies for two-electron atomic ions, 1349(FA*18*)
Convolutions
of amplitude and phase distribution over exit pupil with its complex conjugate, 324
Copper
absorption spectrum of, 1353(FC*17*)
optical constants of — films, 604
phase change at reflection from —–glass interface, 1153
photolysis of —-doped silver chloride, 454
Crystals
color and impurity centers in —, review of *Optics and Spectroscopy* articles on, 1118
emission centers in thermoluminescent —, 1276
for lasers, temperature dependence of refractive index, 1286
of magnesium fluoride, transmittance of, 1003
for optical third-harmonic generation, 523(WB*17*)
organic, luminescence of, 1343(TE*1*)
of palladium, optical constants of, 1332(WB*14*)
rare-earth, relaxation processes in Tb^{3+}, 1129
refractive index of laser —, temperature dependence of, 1286
structure effect on moding of ruby lasers, 522(WB*13*)
transmission filters of — for uv, 519(TD*14*)

Detectors
blackened cone plus thermopile, 729
bolometer, theory of nonisothermal superconducting, 596
collection efficiency of — for large, near sources, 1292
design of thin photoemissive interference films to serve as, 1355(FD*18*)
infrared, 1354(FD*1*)
blackened hollow-cone, 1355(FD*15*)
mercury-doped germanium, 1355(FD*14*)
photomultipliers, intermittent response of, 297
photovoltaic indium arsenide, 1355(FD*13*)
spectral sensitivity of, 1354(FD*12*)
temperature dependence of semiconductor, 1355(FD*16*)
lead-sulfide, performance of — at reduced temperatures, 1355(FD*19*)
photoconductors, influence of nonuniform illumination, 1037
photomultipliers, time of flight of electrons through, 1347 (TF*16*)
quadrant multiplier phototube for position indication, 509(MB*18*)
resistance-strip magnetic photomultiplier, spectral response of, 1344(TD*11*)
spectral responsivity of, 509(MB*17*)
Diffraction
analysis by modified Zernike polynomials, 261
by black obstacles, theory of, 525(WD*15*)
boundary wave in electromagnetic theory of, 878
far-field, of hollow cones, 533
Fraunhofer
for modulation transfer function of photographic materials, 1356(FE*16*)
patterns with coherent background, 1350(FB*11*)
Fresnel — of plane phase grating, 267
for generation of spatial coherence through periodic structures, 524(WD*11*)
images of circular objects
in high-resolution microscopy, 415
in partially coherent light, 779

influence
on images of square objects in incoherent light, 1371
on losses in a pulsed ruby laser, 911
measurement of — images in low-resolution microscopy, 410
near-focus evaluation of integrals for, 1351(FB*20*)
reduction of — in optical systems by amplitude filters, 1342(TC*12*)
scalar modification of Luneberg's theory, 324
by sequence of identical coaxial apertures, 1347(TF*17*)
by sine-wave zone plate, 1350(FB*12*)
by a slit between two different media, 1231
at small dielectric and conducting apertures, 1332(WB*16*)
by spherical-particle systems, 577
theory of image formation by total reflection, 525(WD*16*)
total illuminance of a — image of a point source, 1365
wavefront curvature after — computed by Gullstrand-type formulas, 512(MD*11*)
for Wiener-spectrum determination of granularity of films, 1341(TD*17*)
zone-plates, properties of concave reflecting, 513(MD*20*)

Echelles
for infrared spectrometer, high-resolution, vacuum, 516(TD*18*)
tandem use of, 333
Electro-optic effect
in gallium arsenide for optical shutters, 523(WB*16*)
in hexamethylenetetramine, 1339(TA*17*)
for wide-band modulation by Fabry–Perot interferometer, 1357(FF*11*)
Electroretinogram
saturation of — from rod stimulation, 1335(WD*12*)
Emission
centers in thermoluminescent minerals, 1276
by diffuse conical cavities, 816
from high-density submicrosecond arc channels, 516(TB*14*)
from mercury-vapor discharges, 734
polarized, from thin metal films, 636
spectroscopy, infrared, 506(MA*1*)
thermal, computed from optical constants, 509(MB*21*)
ultraviolet, from carbon-arc plasma, 495
Emissivity
infrared
of carbon dioxide, 951
of HCl, temperature dependence of, 945
of lanthanum–lutetium-doped glass, 1352(FC*15*)
of isothermal cavities, 1162
of nitric oxide, 516(TB*12*)
of shallow cylinder with specularly reflecting walls, 1352(FC*13*)
thermopile for measurement of, 509(MB*19*)
Erbium
energy levels of Er II, 594
spectra, hyperfine structure of, 1349(FA*13*)
Europium
chelates, fluorescence of, 1346(TE*15*, TE*16*)
Errata (see individual subject entries)

Fibers
bundles of —, spectral transmittance of, 1333(WB*21*)
contrast-transfer properties of, 507(MA*18*)
diffuse frequency response of fused — optics, 1332(WB*17*)
evanescent boundary-wave propagation in, 929
glass, for lasers, 515(TA*21*, TA*22*)
light-collecting properties, 256
moving glass —, for computer-controlled flying-spot scanners, 513(MD*19*)
microscope, hypodermic, using — optics, 1333(WB*20*)
retinal receptors as optical —, 71
as waveguides in tracking-scanning system, 507(MA*20*)

Films
cerium dioxide–cerium fluoride —, refractive index of, 880
of germanium, reflectance of, 1331(WB*12*)
interference, for photocathodes, 1355(FC*18*)
Kerr effect, longitudinal, in —, iron, nickel, and Permalloy, 681
metal
optical constants of thin —, wavelength variation, 604
polarized thermal emission from thin —, 636
studied by elliptically polarized light, 788
of molybdenum, optical constants of, 1332(WB*13*)
multilayer — with wide transmittance bands, 519(TD*15*), 1266
of palladium, optical constants of, 1332(WB*14*)
phase change on reflection at chromium, 1331(WB*11*)
reflecting
of platinum for vacuum ultraviolet, 1084
on uranium, effects of immersion, 519(TD*16*)
reflection and transmission of bounded waves from, 519(TD*11*)
refractive index
of cerium fluoride–zinc sulfide mixtures, 1317
of fluoride on uranium dioxide and of anodic oxide on uranium, 613
semireflecting, for production of transmissionlike fringes, 425
as waveguides, 507(MA*17*, MA*18*)
Filters
amplitude, for optical-system improvement, 1342(TC*12*)
complex, spatial, for detection of coherent signals, 1341(TB*16*)
infrared, use of gratings for broad-band, 760, 1005
interference
analysis by analog computer, 1078
narrow-band with mica spacers, 1332(WB*15*)
linear, low-pass, transfer functions for, 1223
modulatable
by Fabry–Perot interferometer, 523(WB*20*)
narrow-band, from Faraday rotation, 523(WB*15*)
multilayer, with wide transmission bands, 519(TD*15*), 1266
stray-light-checking, for monochromators, 721
ultraviolet
composite, narrow band, 1352(FC*11*)
transmitting materials for, 519(TD*14*)
Zeeman-split Hg^{198}, wavelength passed by, 1250, 1382
Fluorescence
of beta-diketone europium chelates, 1346(TE*15*)
color rendition of — paints, 744
of gases, infrared resonance, 516(TB*13*)
infrared, of green leaves, 1006
lifetime of terbium, influence of other rare-earth ions, 301
of Nd^{3+}-doped silicate laser glasses, lifetimes of, 523(WB*14*)
of oxygen and water vapor, 397
photometry of — materials, 879
quantum-efficiency measurement of, 1315, 1346(TE*16*)
of rare-earth
chelates, and quantum efficiencies, 1346(TE*16*)
crystals, time-resolved excitation spectra, 1129
terbium, effect of rare-earth-ion substitution on lifetime of, 494
vibrational, of carbon monoxide, 1345(TE*14*)
Fourier transforms
for analyzing vibration effect on photographic image, 935
in coherency-matrix theory, 317
for degree of coherence, 1350(FB*14*)
for deriving spectral distributions from interferograms, 1355(FD*17*)

Fourier transforms (Continued)
for diffraction by a system of confocal reflectors, 1347 (TF*17*)
for evaluation of plane mirrors, 812
in lens-design processes, 494
and Mach phenomenon, 400
for modulation of square wave objects in incoherent light, 1371
for reciprocity relations between transfer function and total illuminance, 1244
for resolution of a Charactron tube, 1341 (TB*18*)
for spatial frequency components from axicons, 525 (WD*12*)
in spectroscopy for equivalent width of two overlapping absorption lines, 507 (MA*16*)
for transfer functions of linear low-pass filters, 1223

Gadolinium
emission spectrum of doubly ionized —, and energy levels, 695

Gallium
arsenide, for optical shutters and modulators by electro-optic effect, 523 (WB*16*)

Geometrical optics
aberrations
from decentrations and tilts, 1342 (TC*16*)
fifth-order, for system of centered spherical surfaces, 1342 (TC*15*)
automated correction of optical-system designs, 512 (MD*13*)
chromatic aberration, influence on optical transfer function, 513 (MD*15*)
of contrast reduction by atmospheric boil, 351
corrected Cassegrain system, 1342 (TC*17*)
design
of binocular eyepiece systems, 513 (MD*17*)
of cylindrical condensing system for high illuminance, 513 (MD*18*)
lens design, group theoretic aspects of transformation matrix in, 512 (MD*14*)
light-collective properties of fibers, 256
recent ideas in, 661
scattering and extinction of systems of transparent spherical particles computed by, 577
spherical aberrations, method of visualizing, 512 (MD*12*)
wave-front curvature, method of computing, 512 (MD*11*)

Germanium
infrared absorptance of, 1352 (FC*14*)
for light modulation by electric-field induced space-charge layers, 523 (WB*20*)
mercury-doped, for infrared detectors, 1355 (FD*14*)
reflectance, effect of surface damage, 519 (TD*13*), 1403
ultraviolet standard wavelengths from, 710

Glass
absorption spectra of phosphate, 1353 (FC*17*)
Faraday rotation in, 1353 (FC*16*)
formation of —, and liquid structures, 407
lanthanide series of rare-earth —, absorption spectra, 517 (TB*20*)
lanthanum–lutetium-doped, infrared emissivity of, 1352 (FC*15*)
Nd^{3+}-doped silicate laser —, lifetimes of, 523 (WB*14*)
neodymium-doped — for lasers, 1447
for optical third-harmonic generation, 523 (WB*17*)
rare-earth, for wavelength calibration of spectrophotometers, 1353 (FC*18*)
reflectance of aluminized ground —, surface-irregularity dependence, 1389
surface character, method of measuring, 511 (MC*17*)
transmission filters of — for ultraviolet, 519 (TD*14*)

Gold
coatings for Fabry–Perot interferometer, effect on resolving power, 558
efficiency of — gratings in vacuum ultraviolet, 941
optical constants of — films, 604

Gratings
for angle amplification, 1351 (FB*18*)
for broad-band infrared filters, 1005
concave
image construction for — at grazing incidence by ray tracing, 1180
new vagary of, 1253
theory of, 525 (WD*14*)
far-infrared transmission-filter —, 760
Fraunhofer patterns of blazed diffraction, 525 (WD*13*)
Fresnel diffraction of plane-phase —, 267
gold and platinum, efficiencies of — in vacuum ultraviolet, 941
new mount for — for spectrophotometry, 1344 (TD*12*)
stigmatic Ebert-type mounting for plane, 766
tandem use for resolution, luminosity, and compactness of spectrometers, 333
theta modulation by, 1351 (FB*16*)
ultrasonic optical phase —, 429
use of — to measure transfer function of optical systems, 1342 (TC*14*)
wavefront curvature computed after incidence on, 512 (MD*11*)

Helium
wavefunctions and energies of — ions, 1349 (FA*18*)

Hydrogen
chloride, broadening of HCN lines from, 1255
quadrupole spectrum of molecular —, 759
ultraviolet refractive index of, 847
wavefunctions and energies of — ions, 1349 (FA*18*)

Image formation
of Charactron tube by modulation transfer function, 1341 (TB*18*)
with coherent light, 514 (TA*17*)
by concave gratings at grazing incidence by ray tracing, 1180
of continuous-tone objects by wavefront reconstruction, 1377
field structure in three dimensions, 1342 (TC*11*)
of point sources, 1365
probability distribution of camera resolution, 1342 (TC*13*)
on retina, 94
optical and motor factors in, 86
spatial-frequency-bandwidth extension beyond classical limits, 1342 (TC*14*)
of square wave objects in incoherent light, 1371
by synthesis of point-spread functions, 1343 (TC*20*)
by total reflection, theory of, 525 (WD*16*)
through turbulent atmosphere, 1338 (WC*15*)

Indium
arsenide, for photovoltaic infrared detector, 1355 (FD*13*, FD*16*)
phase change at reflection from — –glass interface, 1153

Information theory
for Fraunhofer patterns from blazed diffraction gratings, 525 (WD*13*)
of image-velocity sensors with parallel-slit reticles, 513 (MD*16*), 1416
of optical communication systems, 1332 (WB*18*)

Infrared
absorption
continuum in atmosphere, 466
of HCl, temperature dependence of, 945
of methyl and ethyl alcohols on MgO, 516(TB*17*)
of N_2O, pressure and concentration effects on, 856
of optical materials, 1352(FC*14*)
atmospheric model for — attenuation, 1337(WC*11*, WC*12*)
carbon dioxide, weak telluric bands of, 203
for detecting accommodation changes, 520(WA*12*)
detectors, 1354(FD*1*)
blackened cone plus thermopile, 729
mercury-doped germanium, 1355(FD*14*)
photovoltaic indium arsenide, 1355(FD*13*)
sensitivity of thermocouples, thermistor bolometers, and Golay pneumatic —, 1355(FD*15*)
temperature dependence of semiconductor —, 1355(FD*16*)
emission and absorption spectra for gas-temperature profiles, 517(TB*19*)
emissivity
of carbon dioxide, 951
of lanthanum–lutetium-doped glass, 1352(FC*15*)
filters produced by gratings, 760, 1005
fluorescence
of gases, 516(TB*13*)
of green leaves, 1006
foveal sensitivity, of human eye to near —, 765
interference filters, analysis by analog computer, 1078
interferometer for high-electron-density plasmas, 448
modulation by semiconductors, 524(WB*21*)
photography of flash spectrum at solar eclipse, 1350(FA*20*)
photomultiplier for —, intermittent response of, 297
radiance
of cloud background, physical model for, 1341(TB*15*)
of upper atmosphere, 1334(WA*13*)
reflectance
of aluminum films, 1089
of cirrus (ice) clouds, 860
influence of incidence angle and beam configuration on measurements of, 1357(FE*19*)
standard, diffusing, of sulfur, 458
resolving power of Fabry–Perot interferometer in, 558
solar absorption spectra used to study stratospheric composition, 1335(WC*3*)
solvent effects on carbonyl bands, 202
sources, aluminum and magnesium flames in oxygen, 436
spectrometer, high-resolution, vacuum echelle, 516(TB*18*)
spectroradiometer based on Michelson interferometer, 1355(FD*17*)
systems for Atlantic missile range, 518(TC*14*)
transmittance
measurements, effect of wedge angle and refractive index, 519(TD*12*)
of rhombic sulfur, 398
ultrahigh-speed achromats for, 1343(T€*18*)

Interference
films for photocathodes, 1355(FD*18*)
filters, narrow-band with mica spacers, 1332(WB*15*)
fringes
measure of separation between moving and static surface by, 1358(FF*15*)
transmission like by reflection, 425
Koster — comparator for phase change at reflection from glass–metallic layer interface, 1153
with large path differences, 514(TA*16*)
by He–Ne laser, 394
patterns of ultrasonic optical gratings, 429
from plane phase gratings, multibeam scalar theory, 267
by thin films of fluoride on uranium dioxide and anodic oxide on uranium, 613

Interferometer
for alignment, 526(WD*20*)
common-path
using Fresnel zone plates, 568
for stability, 690
Fabry–Perot
for laser-mode selector, 514(TA*14*)
for light modulation, 523(WB*20*)
with magnetostrictive scanning, 1358(FF*19*)
performance of pressure-scanning spectrometer based on, 1357(FF*12*)
resolving power in infrared, 558
surface-imperfection influence on performance of — in electro-optic type of wide-band modulator, 1357(FF*11*)
tandem use for flatness testing, 526(WD*21*)
for wavelength passed by Zeeman-split Hg^{198} filter, 1250, 1382
far-infrared, for high-electron-density plasmas, 448
for holograms to reconstruct continuous-tone transparencies, 522(WA *21*)
Jamin, some useful variations, 526(WD*19*)
for measurement of optical dispersion near Hg^3P_1—$^1S_0$ transition, 523(WB*15*)
Michelson
for far-infrared spectroradiometer, 1355(FD*17*)
for high-precision pointing, 1358(FF*18*)
with limited collimator field for position control over large distances, 1358(FF*16*)
shearing
radial, using Snell's law of refraction, 1358(FF*17*)
radial, for wavefront aberrations, 395
for refractive-index gradient, 571
for transfer functions of photographic objectives, 1156
single-point-reference, theory of, 1357(FF*14*)
wedge, formation of multiple-beam Fizeau fringes with, 300
Young's two-pinhole, for degree of coherence, 1350(FB*14*)

Interferometry
hyperfine structure and isotope shifts in 2537-Å line by a new method, 1055
multiple-beam Fizeau fringes, formation of, 300
for promethium 147 hyperfine structure, 431
spherical-mirror, of maser beams, 1339(TA*18*)
stellar-correlation, laser amplifiers for, 1347(TF*14*)
tandem use of gratings and echelles, 333
techniques with optical masers, 514(TA*15*)
two-beam technique for wavefront reconstruction with continuous-tone objects, 1377

Iron
absorption spectrum of, 1353(FC*17*)
Kerr effect, longitudinal, in thin films of, 681
optical constants of — films, 604

Krypton
spectrum for spectroradiometric standard, 507(MA*15*)
ultraviolet refractive index of, 847
ultraviolet wavelengths of, 717

Lamps
ribbon-filament, as standards of spectral radiant intensity, 508(MB*13*)
tungsten-filament, quartz-iodine, spectral distribution of, 1357(FE*18*)

Lasers
applications of — in spectroscopy, 1343(TD*1*)
bibliography of open literature on, 647
for coagulation of biological tissues, 1347(TF*15*)
coaxial — pumps, 514(TA*11*)

Lasers (Continued)
continuous, for frequency standard, 515(TA*19*)
coupled substitution in calcium tungstate for, 1339(TA*12*)
from crystalline benzene, 1343(TE*1*)
crystals for, temperature dependence of refractive index of, 1286
detection of — radiation, 1315
effects of absorption of — radiation, 514(TA*13*)
gas, He–Ne
compact, portable, for instruction purposes, 1346(TF*11*)
continuous, as Raman source, 1446, 1503(TD*2*)
for diffraction studies at small apertures, 1332(WB*16*)
for interference fringes over long path, 394
mode-degeneracy effect on output of, 1339(TA*15*)
for time of flight of electrons through a photomultiplier, 1347(TF*16*)
glass, neodymium
-doped, 1339(TA*16*), 1447
in fiber form, 515(TA*21*, TA*22*)
frequency control of, 1347(TF*12*)
images by — light, coherence influence, 1351(FB*15*)
intensity and phase distributions in curved-mirror — modes, 1348(TF*19*)
interferometer mode selector for, 514(TA*14*)
mirror curvatures for, 1348(TF*18*)
modulation
with hexamethylenetetramine, 1339(TA*17*)
by internal reflection barrier, 915
optical heterodyne detection of — light, 515(TA*20*)
photography of, 514(TA*17*)
pulse, mechanical model for demonstrating, 1340(TA*20*)
quantum-efficiency, measurement of — materials, 1315
refractive index of — crystals, temperature dependence of, 1286
resonator-mode analysis of, 1339(TA*13*)
ruby
effects of crystal structure and scattering centers on moding of, 522(WB*13*)
giant-pulsed — for optical third-harmonic generation, 523(WB*17*)
pulsed, losses in, 911
pulsed, Rowland ghosts from, 395
Q-switched, terminated by parallel-roof prisms, 1340 (TA*19*)
scattering of — light by gases, 1347(TF*13*)
time-resolved spectroscopy of — emissions, 700
for stellar correlation interferometry, 1347(TF*14*)
surface texture in imaging by, 1350(FB*13*)

Lead
sulfide
and arsenide for infrared detectors, 1355(FD*16*)
performance of — detectors at reduced temperatures, 1355(FD*19*)

Lens design
algebraic, 661
automated
for differential correction, 512(MD*13*)
with ray-deviation criterion, 1343(TC*19*)
binocular wide-angle eyepiece systems, 513(MD*17*)
cylindrical condensing system for high illuminance, 513 (MD*18*)
by a differential method, 807
formula for wavelength variation of refractive index for use in, 1006
Gaussian expansion of transfer function, 494
theories for semi-automatic, 672, 677
transformation matrix in —, group theoretic aspects of, 512(MD*14*)
ultrahigh-speed achromats for 8- to 12-μ region, 1343 TC(*18*)

Lighting
influence of nonuniform — on response of photoconductors, 1037

Lithium
fluoride, ultraviolet transmittance of, 851
wavefunctions and energies of — ions, 1349(FA*18*)

Luminescence
molecular, polarization of, 797
in organic nonconductors, 1343(TE*1*)
thermo-, of calcite, dolomite, magnesite, and anhydrite, 1276

Magnesium
fluoride, transmittance of single-crystal, 1003
gas adsorption on — oxide studied by infrared spectroscopy, 516(TB*17*)
infrared source produced by — flames in oxygen, 436
silicide, germanide, and stannide, refractive index of, 298

Magneto-optical effect
application to study of magnetic films, 525(WD*17*)
Faraday rotation
in glasses, 1353(FC*16*)
in a spin system, 1115
longitudinal — in iron, nickel, and Permalloy films, 681
longitudinal and transverse Kerr effect for studying magnetic films, 525(WD*17*)
and masers, 1338(TA*1*)
modulation of a light beam by Faraday effect, 1338(TA*11*)

Manganese
absorption spectrum of, 1353(FC*17*)

Masers
from dissociation of diatomic and polyatomic gases, 522 (WB*12*)
from flux-grown ruby, 522(WB*11*)
interferometric techniques with, 514(TA*15*)
interferometry, spherical-mirror, of — beams, 1339(TA*18*)
from magnetic dipole radiation in electrical discharges, 1043
and magneto optics, 1338(TA*1*)
neodymium-doped glass and calcium tungstate, pumping efficiency of, 1339(TA*14*)
optical, current developments in, 513(TA*1*)
polariscope for pulsed, 515(TA*18*)
refractive index of — crystals, temperature dependence of, 1286

Mercury
afterglow of — in Hg–Ar discharge, 1139
hydride, hyperfine structure in spectrum of, 338
hyperfine structure and isotope shift
for $^{199}Hg^{m}$ (11h), 506(MA*11*)
in 2537-Å line, 1055
and nuclear moments of Hg^{195}, Hg^{195m}, and Hg^{194}, 822, 828
optical pumping of — atoms detected by Zeeman-effect changes, 902
ultraviolet standard wavelengths from, 710
ultraviolet wavelengths of, 717
vapor discharges at low pressure, moving striations in, 734
Zeeman filter, wavelength passed by, 1250, 1382

Metrology
of angles, by Michelson interferometer, 1358(FF*18*)
common-path interferometers for, 690
Fabry–Perot étalons in series for flatness testing, 526 (WD*21*)
integral and fractional multiples of a given radiance, 1448
interferometer for alignment, 526(WD*20*)
position measurement and control by Michelson interferometer with limited collimator field, 1358(FF*16*)
of small angles by gratings, 1351(FB*18*)

Microscopy
high-resolution diffraction images of circular objects, 415
hypodermic, using fiber optics, 1333(WB*20*)
low resolution, measurements of diffraction images with, 410
magnification beyond Rayleigh's limits, 639
Microwaves
radiation pattern of — antenna enclosed by hollow dielectric wedge, 1351(FB*17*)
Mirrors
aluminum, silicon-oxide-protected, increasing reflectance of — by ultraviolet irradiation, 1096
curvatures of, for laser cavities, 1348(TF*18*)
plane, evaluation of — by contrast transfer, 812
Molybdenum
optical constants of — films, 1332(WB*13*)
ultraviolet reflectance of, 1352(FC*12*)

Neodymium
absorption bands of — in glass and tungstate maser rods, 1339(TA*14*)
glass fibers for lasers, 515(TA*21*, TA*22*)
glass laser, 1447
frequency control of, 1347(TF*12*)
lifetimes of —-doped silicate laser glasses, 523(WB*14*)
Neon
ultraviolet standard wavelengths from —, 710
Neptunium
spectrum, hyperfine structure, and Zeeman effect in, 506 (MA*13*)
Nickel
absorption spectrum of —, 1353(FC*17*)
Kerr effect, longitudinal, in thin films of, 681
optical constants of — films, 604
Nitrogen
emissivity of nitric oxide, 516(TB*12*)
infrared absorptance of N_2O, 856
oxides of —, 02^00–01^10 band of $N_2{}^{14}O$, 1345(TE*13*)
Rydberg series in, 1051
spectrum
from iron arc in air, 1345(TE*11*)
of NO_2
for spectroradiometric standard, 507(MA*15*)
ultraviolet refractive index of, 840, 847
ultraviolet standard wavelengths from, 711

Oceanography
absorption of sea water, 962
light scattering of sea water, 214
Optical Society of America
board-meeting minutes, 1454
Ives medal for
1961 to Seibert Q. Duntley, 211
1962 to Max Herzberger, 657
Mees medal for 1962 to Alfred Kastler, 899
Optics—an action program, 772
secretary's report for 1962, 1456
Tillyer medal for 1963 to Clarence H. Graham, 1015
treasurer's report for 1962, 1463
Optical systems
aberrations from decentrations and tilts in, 1342(TC*16*)
aplanatic, electromagnetic-field structure near focus of, 1342(TC*11*)
appraisal of — by image syntheses by spot diagrams, 1343(TC*201*)
for Atlantic missile range, 518(TC*14*, TC*15*)
Cassegrain corrected, 1342(TC*17*)
for detection of angle modulation of light beam, 1344 (TD*16*)
fifth-order aberrations of centered spherical surfaces, 1342(TC*15*)
fine correction of — by a differential method, 807
improvement of — by amplitude filters, 1342(TC*12*)
new schlieren — for optical-thickness gradients of a distance, 1344(TD*14*)
nonimage-forming, four-pole network theory of, 317
numerical aperture of —, influence on transfer function of photographic emulsions, 1114
Schmidt–Cassegrain telescopes for guidance of space vehicles, 1344(TD*18*)
spot-diagram analysis of, 661
transfer functions
measurement by gratings, 1342(TC*14*)
and total illuminance of —, reciprocity relations between, 1244
Optics
as a branch of electrical engineering, 1346(TE*17*)
characteristic-vector analysis in, 968
and the scientific manpower problem, 1348(FA*1*)
theta modulation in, 1351(FB*16*)
Oxygen
absorption by filter radiometry, 516(TB*15*)
fluorescence of, 397
free-free continuum of —, effect of polarization and exchange, 924

Palladium
optical constants of — films, 1332(WB*14*)
Phosphors
color and efficiency of — blends, 1185
phenanthrene, coronene, and pyrazine, polarization of luminescence, 797
Photographic emulsions
absorption of colloidal suspensions, 239
detective quantum efficiency of, 1356(FE*13*)
grain coarseness of, 361
granularity of —, Wiener spectrum determined by diffraction, 1341(TB*17*)
modulation transfer function of — by Fraunhofer diffraction methods, 1356(FE*16*)
resolving power of, 368
sine-wave response, erratum, 500
transfer function of, dependence on numerical aperture of optical system, 1114
Photography
absolute contrast enhancement by masking, 1356(FE*15*)
adjacency effects in xerography, 1357(FE*17*)
aerial, camera control by image-velocity sensors, 1416
characteristic-vector analysis applied to, 968
with coherent light, 514(TA*17*)
color
for mapping separation between a moving and a static surface by interference-fringe patterns, 1358(FF*15*)
of solar eclipse, 1349(FA*19*)
contrast attenuation by atmosphere, 1338(WC*14*)
detection of threshold signals, exposure criteria for, 1356 (FE*13*)
fine-detail reproduction, analysis by modulation transfer, 521(WA*19*)
grain-noise reduction by image superposition, 1356(FE*14*)
infrared, of flash spectrum at solar eclipse, 1350(FA*20*)
motion-picture, image-smearing errors, 1101
photolysis in copper-doped silver chloride, 454
probability distribution of resolution by, 1342(TC*13*)
production of complex spatial filter by — for detection of coherent signals, 1341(TB*16*)
sine-wave response of aerial film, erratum, 500

Photography (Continued)
transfer functions of objectives for — measured by polarizing shearing interferometer, 1156
vibration influence on image, 935
Photometry
of fluorescent materials, 879
integral and fractional multiples of a given radiance, 1448
new method for linear scale, 511(MC*16*)
terminology in —, 1314
Plasmas
carbon arc, long, high-current, magnetically confined, 495
high electron density, infrared interferometer for, 448
mercury–argon electric discharge, decay of mercury lines, 1139
optical simulation in study of radiative heating of re-entry vehicles, 1341
Penning discharge as extreme ultraviolet source, 301
radiance-coefficient profiles of optically thin — from observed asymmetric radiance distribution, 1172
radiometry of — in vacuum ultraviolet, 1259
shock waves in —, interferometer for study of, 690
stimulated emission of magnetic dipole radiation, 1043
Platinum
efficiency of — gratings in vacuum ultraviolet, 941
reflecting films of — for vacuum ultraviolet, 1084
Polarization
circular, energy-flow vector in terms of, 252
control of frustration of total reflection by azimuth of incident —, 525(WD*18*)
effect on Raman scattering, 523(WB*18*)
elliptical
analysis of — by inexact Senarmont compensators, 801
to study metal surfaces, 788
Faraday rotation
in glasses, 1353(FC*16*)
in a spin system, 1115
of light thermally emitted from thin metal films, 636
measurement by ADP modulator, 640
of molecular luminescence, 797
properties of hollow cone, 545
rotation of plane of — by Faraday effect, 1338(TA*11*)
Senarmont polariscope for maser light, 515(TA*18*)
of skylight, 1341(TB*14*)
transfer functions of photographic objectives by — shearing interferometer, 1156
Polarizers
for solar chromospheric observations, 518(TC*11*)
Potassium
ultraviolet absorption of — chloride, bromide, and iodide, 517(TB*21*)
Praseodymium
analysis of third spectrum of, 831
Promethium
spectrum, hyperfine structure of, 431, 1348(FA*11*)
Protactinium
emission spectrum of, 506(MA*14*)

Radiation
Čerenkov, for ultraviolet refractive index of gases, 840
from circular, optically thin media, radiance coefficient profile determined from observed asymmetric radiance distribution, 1172
design of systems to heat by —, 1341(TB*19*, TB*20*)
from high explosives, 509(MB*20*)
from isothermal cavities of various shapes, 1162
modulation of infrared — by semiconductors, 524(WB*21*)
patterns of microwave antenna
in dielectric shell, 1351(FB*17*)
in hollow dielectric wedge, 545
in the sea, 214
scheme for obtaining integral and fractional multiples of a given —, 1448
theory of Green–Wolf scalar potential, 252
third harmonic, with giant-pulse ruby laser, 523(WB*17*)
transfer predictions, errors from assuming Lambert's-law sources, 1351(FB*19*)
Radiometry
of extended sources close to receiver, 1292
for measuring O_3 absorption, 516(TB*15*)
spectral responsivity of radiometers, 509(MB*17*)
terminology in, 400, 1314
under-water, 214
in vacuum ultraviolet, 1259
Ray tracing
of grating by computer program, 518(TC*12*)
Gullstrand-type formulas for — programmed for computer, 512(MD*11*)
for image construction for concave gratings at grazing incidence, 1180
in optical-system design, 661
for radiation patterns and boresight error of microwave antenna, 1351(FB*17*)
Reflectance
of aluminized ground glass, surface-irregularity dependence, 1389, 1394
of aluminum mirrors, silicon-oxide-protected, increase of — by ultraviolet irradiation, 1096
of anodic-oxide films on uranium, effects of immersion, 519(TD*16*)
directional, of blackened aluminum honeycomb, 511(MC*19*)
of earth from high altitudes, 1333(WA*11*)
of germanium, 1331(WB*12*)
surface-damage effect on, 1403
infrared
of aluminum films, 1089
of bismuth deposits, 1271
of cirrus (ice) clouds, 860
and hemispherical, normal, and angular spectral emittance, 509(MB*21*)
influence of incidence angle and beam configuration on measurements of, 1357(FE*19*)
standards of, 458
internal, for diffuse incidence, 234
of a plane, parallel homogeneous cloud, 1334(WA*14*)
reflectometer for optical constants, 1344(TD*13*)
of scattering layers by one-dimensional random-walk theory, 517(TB*22*)
of selenium, vitreous and metallic, in vacuum ultraviolet, 804
solar, instrument for measuring, 509(MB*19*)
surface-damage effect on germanium, 519(TD*13*)
of thin films, 613
ultraviolet
of aluminum before and during oxidation, 620
of platinum films, 1084
of refractory metals, 1352(FC*12*)
of zinc sulfide in interband transition region, 399
Reflection
of bounded waves from thin films, 519(TD*11*)
frustrated, total
dependence on incident polarization azimuth, 525(WD*18*)
for laser modulation, 912
influence of Fresnel — on light-collecting properties of fibers, 256
phase change on,
at chromium films, 1331(WB*11*)
from glass–metallic layer interface, 1153

Refractive index
of cerium dioxide–cerium fluoride films, 880
of cerium fluoride–zinc sulfide films, 1317
and extinction coefficient, geometric method of evaluating — from reflectance ratios, 247
of fluoride and oxide films by immersion spectrophotometry, 613
of gases
by Čerenkov radiation method, 840
by Rayleigh scattering method, 847
gradients of, measured from a far distance, 1344(TD*14*)
influence of
on absorption of nonparallel radiation, 234
of immersing medium on reflectance of anodic-oxide films on uranium, 519(TD*16*)
in infrared spectrophotometry of wedges, 519(TD*12*)
infrared, of bismuth deposits, 1271
of laser crystals, temperature dependence of, 1286
of Mg_2Si, Mg_2Ge, and Mg_2Sn, 298
of mercury, near $^3P_1$–$^1S_0$ transition, 523(WB*15*)
of metal films, by elliptically polarized light, 788
of molybdenum films, 1332(WB*13*)
by one-angle reflection technique, 1073
of palladium films, 1332(WB*14*)
of platinum in ultraviolet, 1084
of strontium molybdate single crystal, 637
of thin metallic films, wavelength variation, 604
wavefront shearing interferometer for — gradients, 571
wavelength variation of, formula for, 1006
of ZnS and CdS single hexagonal crystals, 496
Refractometry
interferometric, 690
with temperature control and variation, 1286
Relativity
Einstein's light-velocity postulate, 760
propagation of light from a moving source, erratum, 310
speed of light transmitted by moving glass plates, 1357 (FF*13*)
time-dilation expression, 1008
Rhenium
ultraviolet reflectance of, 1352(FC*12*)
Rockets
measurement of night airglow by, 518(TC*13*)
optical and infrared systems to track —, 518(TC*14*, TC*15*)
spectrograph for — plumes, 1345(TD*19*)
spectrophotometer, ultraviolet, 518(TC*12*)

Samarium
chelates, fluorescent quantum efficiency of, 1346(TE*16*)
isotope shift in spectrum of, 638
Sapphire
infrared absorptance of, 1352(FC*14*)
Scattering
atmospheric, diffuse-field theory of, 1333(WA*12*)
coefficients of turbid media, 1353(FC*19*)
by cornea of human eye, 869
effect of — centers on moding in ruby lasers, 522(WB*13*)
in eye media from fundus studied by Stiles–Crawford effect, 1337(WB*19*), 1449
by glycogen as a standard for radioactive sources, 1410
of light in sea, 214
of Los Angeles atmosphere, 1340(TB*13*)
in lower atmosphere, 358
Raman
of light from He–Ne continuous laser, 1446, 1503(TD*2*)
in nitrobenzene, benzene, and toluene, 523(WB*18*)
Rayleigh
and Mie — used to estimate earth's reflectance and albedo, 1333(WA*11*)
near an absorption line, 1223
for ultraviolet refractive index of gases, 847
of ruby-laser light by gases, 1347(TF*13*)
by spherical particles
computed by geometrical optics, diffraction, and the Mie theory, 577
Rayleigh–Gans theory of, 758
Thomson, high-intensity limit of, 1003
Selenium
ground-state molecular constants of $H_2{}^{80}Se$, 516(TB*16*)
reflectance of vitreous and metallic — in vacuum ultraviolet, 804
Silicon
infrared absorptance of, 1352(FC*14*)
oxide, for protecting aluminum mirrors for ultraviolet, 1096
Silver
chloride, photolysis in copper-doped, 454
coatings for Fabry–Perot interferometer, effect on resolving power, 558
optical constants of — films, 604
Sodium
coupled substitution by — in calcium tungstate laser materials, 1339(TA*12*)
ultraviolet absorption of — chloride, 517(TB*21*)
Sources
atomic-beam, for spectra of rare gases, 1349(FA*16*)
color and efficiency of luminescent —, 1185
color rendition of fluorescent paints by various —, 744
errors in motion-picture photography of — from image smearing, 1101
hollow-cathode discharge for radiation standards in vacuum ultraviolet, 1259
infrared, from aluminum and magnesium flames in oxygen, 436
isotropic volume radioactive, total quantum flux from, 1410
luminescent, color of, 511(MC*15*)
measurement of — close to receiver, 1292
microwave line — for vacuum ultraviolet, 297
point, total illuminance in diffraction image of, 1365
Raman, He–Ne continuous laser for, 1446, 1503(TD*2*)
stabilized xenon arc lamp for stellar simulator, 1344 (TD*17*)
tungsten-filament, quartz-iodine lamps, spectral distribution of, 1357(FE*18*)
ultraviolet, Penning discharge as, 302
volume, errors from assuming Lambert's law for, 1351 (FB*19*)
Spectra
absorption
of acetylene analyzed to give rotation–vibration constants, 589
of lanthanide series of rare-earth glasses, 517(TB*20*)
of phosphate glasses, 1353(FC*17*)
of thermoluminescent minerals, 1276
of water vapor at 2.7 μ, 1334(WC*2*)
atomic
analysis of cerium —, 1349(FA*14*)
of arsenic, 1349(FA*17*)
of Ce III, 1348(FA*12*)
of erbium, 1349(FA*13*)
of Hg^{198}, Hg^{199m}, and Hg^{194} for hyperfine structure, isotope shifts, and nuclear moments, 822, 828
hyperfine structure of Pm^{147}, 1348(FA*11*)
hyperfine structure and isotope shifts of cadmium, 1147
of Kr^{86}, Hg^{198}, and Cd^{114}, 717
praseodymium, analysis of third —, 831
report of subcommittee D, 886
review of *Optics and Spectroscopy* articles, 1118
samarium, isotope shift in —, 638

Spectra (Continued)
of atoms and ions, energy levels derived from, 918
automatic comparator for line —, 1349(FA*15*)
of cerium, low-energy levels from, 1047
of diatomic molecules, report of subcommittee E, 889
emission
berkelium, 506(MA*11*)
gadolinium, doubly ionized, 695
influence of argon on afterglow of mercury —, 1139
from metal powder–oxygen flames, 436
mercury, 506(MA*11*)
neptunium, 506(MA*13*)
protactinium, 506(MA*14*)
thermoluminescent minerals, 1276
fluorescence, of rare-earth crystals, time-resolved, 1129
of HCN, broadening of lines from argon, carbon dioxide, and hydrogen chloride, 1255
infrared
carbon dioxide, 203
solvent effects on carbonyl bands, 202
molecular
of C_2 Swan bands, 1345(TE*12*)
mercury hydride, hyperfine structure, 338
of $N_2{}^{14}O$, 1345(TE*13*)
nitrogen, 1345(TE*11*)
quadrupole, of hydrogen, 759
of rare gases, atomic-beam source for, 1349(FA*16*)
reflection, of germanium, 519(TD*13*)
time-resolved
fluorescence of rare-earth crystals, 1129
influence of argon on mercury —, 1139
ultraviolet
of Ge, Ne, C, Hg, and N, 710
of nitrogen, 1051
vibrational — of excited electronic states, excitation–modulation technique, 703

Spectrometer
calibration of, for radiometry in vacuum ultraviolet, 1259
infrared, high-resolution vacuum echelle, 516(TB*18*)
polarizing, for study of metal films, 788
pressure-scanning, Fabry–Perot interference —, performance of, 1357(FF*12*)
stray light in, 721

Spectrophotometry
abridged, for large-sample viewing, 1356(FE*12*)
broadened spectral distribution by new grating mount, 1344(TD*12*)
immersion, of interference films, 613
infrared, effect of wedge angle and refractive index, 519(TD*12*)
of turbid media, 1353(FC*19*)
ultraviolet, rocket-borne, 518(TC*12*)
wavelength calibration, rare-earth glass for, 517(TB*20*), 1353(FC*18*)

Spectroradiometry
design and performance of instruments for, 1354(FD*11*)
of fluorescent lamps for chromaticity coordinates, 508 (MB*11*, MB*12*)
interferential, for far infrared, 1355(FD*17*)
of lamps, stray-light evaluation in, 721
standard of radiant intensity, 508(MB*13*)
ultraviolet
rare gases as standards, 507(MA*15*)
in vacuum —, 1259
of xenon arcs
for chromaticity coordinates, 508(MB*14*)
for ultraviolet, 508(MB*15*)

Spectroscopy
absorption, equivalent width of two overlapping lines, 507(MA*16*)
advances in — from use of coherent light, 1343(TD*1*)
atomic
isotope shift in λ5556 Å of ytterbium I, 299
review of articles on — in *Optics and Spectroscopy*, 1319
chemical, review of *Optics and Spectroscopy* articles, 1118
emission
and absorption for gas-temperature profiles, 517(TB*19*)
infrared, 506(MA*1*)
excitation–modulation, for excited electronic states of molecules, 703
hyperfine structure and isotope shifts
in mercury at 2537 Å, new method for, 1055
and nuclear moments of Hg^{195}, Hg^{195m}, and Hg^{194}, 822, 828
infrared study of adsorbed surface layers, 516(TB*17*)
minutes of Tokyo meeting of the Triple Commission for, 883
molecular
intensity distribution from diatomic and symmetric-top molecules, 439
of NO_2, 515(TB*11*)
statistical model for ν_3 fundamental of CO_2, 344
theory of line strengths for hydrogen selenide, 516 (TB*16*)
theory of line strengths of nitric oxide, 516(TB*12*)
transition probabilities of BeO ($B^1\Sigma^+$–$X^1\Sigma^+$) system, 298
Raman lines in nitrobenzene, benzene, and toluene, 523 (WB*18*)
of rocket plumes, 1345(TD*19*)
Rowland ghosts with laser illumination, 395
tandem use of gratings and echelles to increase resolution, luminosity, and compactness, 333
time-resolved, of ruby-laser emissions, 700

Strontium
molybdate, refractive index of single crystal of, 637

Sulfur
infrared reflectance standard, 458
rhombic, infrared transmittance, 398

Sun
chromospheric observations, technique for, 518(TC*11*)
eclipse, color photography of, 1349(FA*19*)
flash spectrum of eclipse, infrared photography of, 1350 (FA*20*)
simulation, design methods for, 1341(TB*19*)

Tantalum
ultraviolet reflectance of, 1352(FC*12*)

Terbium
chelates, fluorescent quantum efficiency of, 1356(TE*16*)
fluorescent lifetime of, influence of other rare-earth ions, 301, 494
relaxation properties of — ions studied by time-resolved fluorescence spectra of rare-earth crystals, 1129

Titanium
absorption spectrum of, 1353(FC*17*)

Transmittance
of atmosphere along slant path, 1338(WC*13*)
of fiber bundles, 1333(WB*21*)
infrared
of bismuth deposits, 1271
effect of wedge angle and refractive index, 519(TD*12*)
of rhombic sulfur, 398
of Los Angeles atmosphere, 1340(TB*13*)
of magnesium fluoride and IRTRAN-1, 1003
of multilayer filters, 1266
of a plane, parallel homogeneous cloud, 1334(WA*14*)
of scattering layers by one-dimensional random-walk theory, 517(TB*22*)

of a slit compared to geometrical-optics value of, 1237
of thin films for bounded waves, 519(TD*11*)
of water
for ruby-laser light, 514(TA*12*)
from the sea, 214
ultraviolet, of lithium fluoride, influence of crystal surface, 851

Tungsten
ultraviolet reflectance of, 1353(FC*12*)

Ultraviolet
absorption spectra of alkali halides, 517(TB*21*)
atmospheric scattering of, 1333(WA*12*)
cladded laminar optics for, 507(MA*19*)
efficiencies of gold and platinum gratings in vacuum —, 941
filters, composite, narrow-band, 1352(FC*11*)
microwave line source for vacuum —, 297
optical constants of molybdenum films in, 1332(WB*13*)
platinum reflecting films for, 1084
radiance of upper atmosphere, 1334(WA*13*)
reflectance
of aluminum before and during oxidation, 620
of aluminum mirrors, silicon-oxide-protected, 1096
of refractory metals, 1352(FC*12*)
of selenium, vitreous and metallic, 804
reflectometer, for satellite-vehicle surfaces, 509(MB*19*)
refractive indices of gases in —
by Čerenkov radiation method, 840
by Rayleigh scattering method, 847
sensitivity of resistance-strip magnetic photomultiplier, 1344(TD*11*)
source, Penning discharge as, 302
spectra
of Ge, Ne, C, Hg, and N, 710
of Kr^{80}, Hg^{198}, and Cd^{114}, 717
of nitrogen, 1051
spectrophotometer, rocket-borne, 518(TC*12*)
spectroradiometry
rare gases as standards, 507(MA*15*)
of xenon arcs, 508(MB*15*)
transmission filters, materials for, 519(TD*14*)
transmittance of lithium fluoride, 851

Uranium
refractive indices of anodic oxide films on — and fluoride films on — dioxide, 613

Vanadium
absorption spectrum of, 1353(FC*17*)

Vision
accommodation, 86
high-resolution optometer for continuous measurement of, 520(WA*12*)
acuity,
of albinos, 521(WA*15*)
variation of stereoscopic — with observation distance, 630
adaptation, Wald's compartment theory, 287
after images, continuous negative, 761
Ames trapezoid window, 1019
apparent motion, spatio-temporal factors in cessation of, 304
assimilation and contrast, 179, 196
autokinesis, variation with position of eye in orbit, 521 (WA*17*)
binocular
interaction in frog retina, 1423
Luneberg theory of, 510(MC*1*)
rivalry of contours in stereopsis, 994
summation in the peripheral retina, 1199
blind spot, retinal sensitivity in region corresponding to — in other eye, 1437
brightness
contrast and modulation transfer function, 1336(WD*16*)
discrimination, effect of body position on, 1114
matches, chromatic-adaptation, influence on, 1103
perception, influence of adaptation, 375
central pathways integrative processes in, 58
chromatic adaptation
influence on brightness matches, 1103
v. Kries transformations, 510(MC*13*)
chromatic induction, use of spinning disks, 500
color
dimensionality of, 1356(FE*11*)
nonlinear dependence of — difference perception on chromaticity difference, 754
color-blindness
of albinos, 521(WA*15*)
acquired, 185, 196
and chromatic-adaptation effect on brightness matches, 1103
theory of discrimination, 165
color differences by paired comparisons, 1214
color induction, 510(MC*12*)
color-matching functions, test of large-field —, 511(MC*14*)
color perception
of red light–tungsten light mixtures, 978
with stabilized retinal image, 741
color-vision theory, 520(WA*11*)
contour interaction and resolution, 1026
contrast
and assimilation, 179
and inducing stimulus output, 1033
cornea, scattering by, 869
critical flicker frequency
effect of wavelength, 480
and phased surrounds, 497
surround luminance and light-time fraction influence on, 975
dark adaptation
effect on human ERG, 386
and increment threshold, 104, 161
initial stages of, 98, 161
depth perception, with delayed presentation to second eye, 521(WA*16*)
detection by rating-scale method, 1206
discrimination
acquired deficiencies in, 185, 196
effect of bandwidth in — of spectrum colors, 874
fluctuation theory of chromatic —, 121, 161
influence of orientation, 763
neural theories of, 129, 161
theory of chromatic —, 165
entoptic stray light
from fundus studied by Stiles–Crawford effect, 1337 (WD*19*), 1449
from halation in fundus, 521(WA*15*)
eye movements, 86
through field glasses, measurement of muscle tremble associated with, 1336(WD*18*)
flicker perception
influence of size and luminance on, 750
masking effect, 520(WA*13*)
nonlinearity of, 521(WA*14*)
foveal
effect of wavelength on critical flicker frequency, 480
flicker-frequency perception, 750
sensitivity to near infrared, 765
graininess perception, 361

Vision (Continued)
human ERG
of albinos, 521(WA*15*)
changes in — during early dark adaptation, 386
induction and brightness contrast, 1033
inhibition, spatial and temporal aspects of, 110
light adaptation, initial stages of, 98
luminance discrimination, neural theories of, 129, 161
Mach phenomenon, linearity of response, 400
masking by flickering light, 520(WA*13*)
mechanisms
in cats studied by responses in lateral geniculate and striate cortex to monocular and interocular stimuli, 1337(WD*20*)
of color, interrelations between, 1305
modulation-transfer function of visual system found from contrast phenomena, 1336(WD*16*)
movement perception
real and apparent, 520(WA*1*), 1019
spatio-temporal factors in, 304
optic-nerve-fiber properties and light and dark adaptation, 1335(WD*1*)
peripheral, thresholds for uniocular and binocular excitation, 1199
photochemistry of retina, 20
physiology of retina, 36
point-spread function, 521(WA*18*)
pupil reflex
from double-pulse stimulation, 1430
nonlinearity in dynamics of, 1336(WD*15*)
quantum- and energy-based sensitivity shown on single plot, 641
receptors
molecular organization of, 1
optical properties of, 71
staining of — as a response indicator, 1335(WD*11*)
structure of, 20
resolution and contour interaction, 1026
retina
binocular interaction in the frog —, 1423
burns from nuclear events, 1333(WB*19*)
electrophysiology of, 49
image formation on, 94
inhibitory interaction, 110
"on"-center and "off"-center fields, 66
photochemistry of, 20
physiological irradiation across, 1336(WD*14*)
physiology of, 36
sensitivity of — corresponding to blind spot in other eye, 1437
wave guides in, 71
retinal chemistry, reactions of carotenoids and secondary amines, 1335(WD*13*)
retinal images, optical and motor factors in formation of, 86
rod, theories of, 287
saturation of color, quantitative estimates of, 487
scattering by cornea, 869
shutter for — experiments, 642
of stabilized images
color perception with, 741
contour-flicker and apparent-motion effects on, 1336(WD*16*)
stereopsis and binocular rivalry of contours, 994
stereoscopic
acuity variation with observation distance, 630
with delayed presentation to second eye, 521(WA*16*)
depth perception and exposure delay to second eye, 1296
Stiles–Crawford effect, 71
influence of drugs on, 1007
use to study fundus component of entoptic stray light, 1337(WD*19*)
surround luminance, influence on critical frequency of flicker, 975
theory
of color discrimination, 121, 165
of excitation, 20
of luminance discrimination, 129, 161
thresholds
absolute — by rating-scale method, 1206
increment — and dark adaptation, 104, 161
visibility of moving object, 283

Xenon
color rendition of fluorescent paints by — arc, 744
scattering by, 1347(TF*13*)
spectrum for spectroradiometric standard, 507(MA*15*)
ultraviolet index of, 847

Ytterbium I
isotope shift in λ5556° Å, 299

Zinc
absorption spectrum of, 1353(FC*17*)
sulfide
refractive index of, 496, 1317
spectral reflectance of cubic —, 399
Zone plates
common-path interferometer using Fresnel —, 568
concave reflecting, properties of, 513(MD*20*)
sine-wave, 1350(FB*12*)